THE GAME BIRDS PIGEONS AND WATERFOWL OF INDIA

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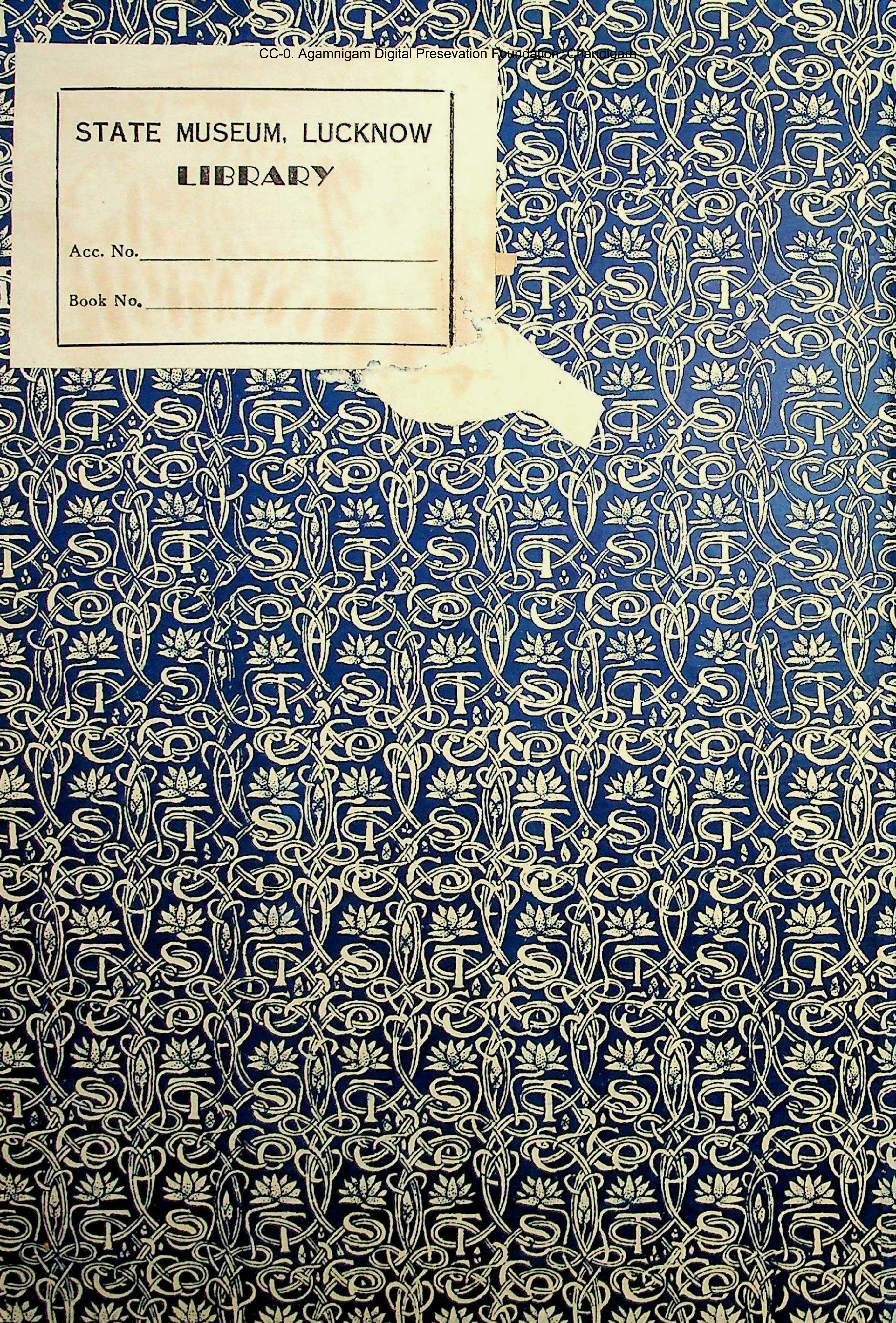

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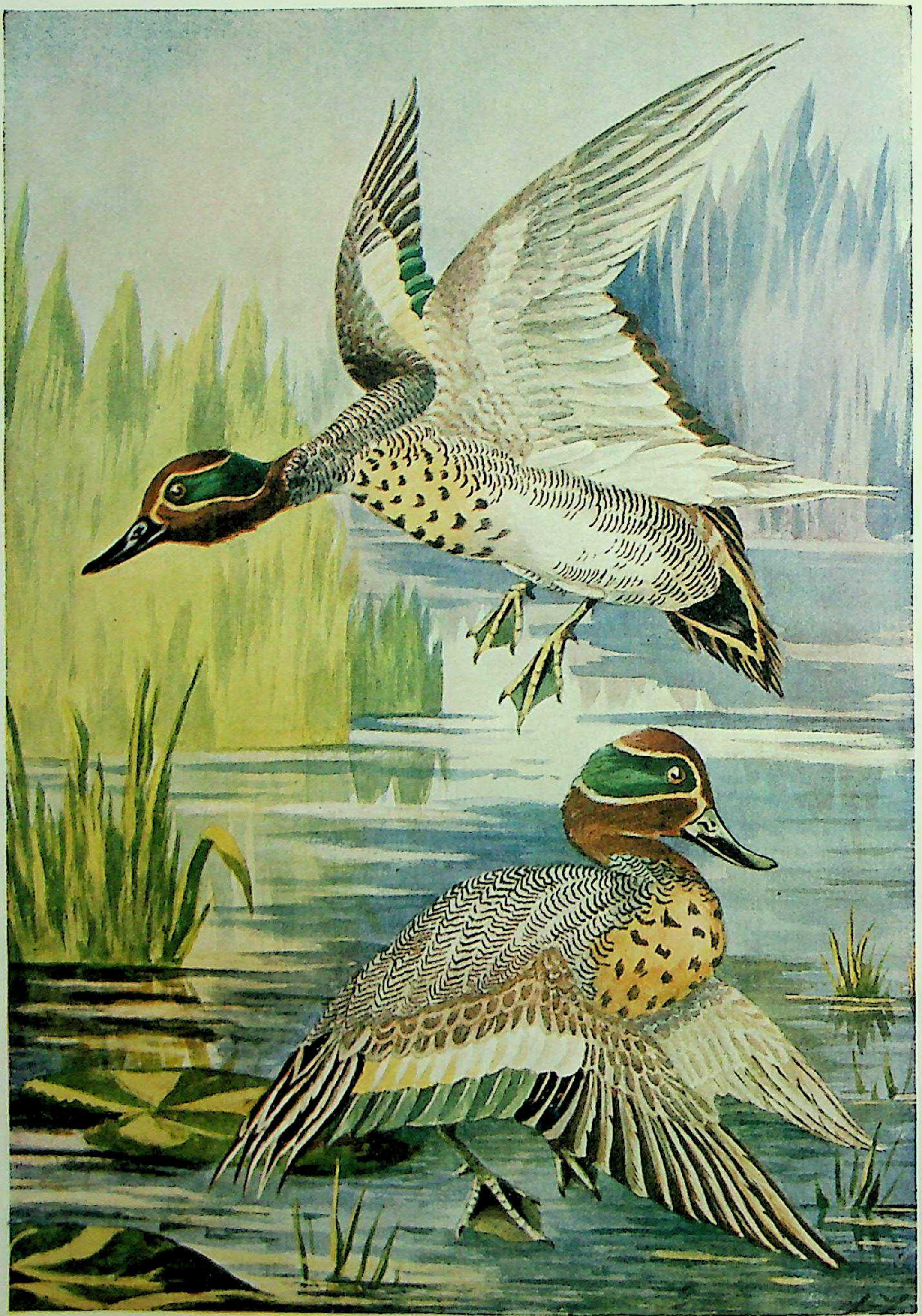

COMMON TEAL.

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Provincial Museum, LUCKNOW.

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DOUGLAS DEWAR
AND
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PREFACE.

As the excellent books on Indian sporting birds embellished by coloured plates are of necessity so costly that by no means every sportsman can afford to buy them, it is felt that an illustrated handbook at a moderate price will be appreciated by many, even though the plates are not in colour.

For this reason the present volume has been issued. It consists of the chapters of *The Common Birds of India* that treat of the birds in which sportsmen are particularly interested.

CAMBERLEY:
June 1930.

D. DEWAR.

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VERNACULAR NAMES OF BIRDS.

Note ă sounds like u in but.
ā ,, ,, a in far.
e ,, ,, ai in air.
i ,, ,, ee in fee.
ŏ ,, ,, o in or.
ō ,, ,, o or poke
u ,, ,, oo in soon.

Ablāk	Tufted Duck.
Băn murghi	Red Jungle-fowl.
Băn Titar	Hill Partridge.
Bărā Bàter	Grey Quail.
Băter	Grey Quail.
Bhăt Titār	Sand Grouse
Burār Năr	Pochard.
Chăhā	Snipe.
Chaitwā	Garganey Teal.
Chăkwā Chăkwi	Brahminy Duck.
Chărăs Chărăt	Bengal Florican.
China Băter	Rain Quail.
Chir	Chir Pheasant.
Chitrōka Făkhta	Spotted Dove.
Chōtā Chăhā	Jack Snipe.
Chōtā Chărăs Chōtā Chărāt	Lesser Florican.
Chōtā Fākhtā	Little Brown Dove.
Chōtā Jŭngli Mūrghi	Red Spur-fowl.
Chōtā Lālsir	Widgeon.
Chōtā Lăwā	Little Button Quail.
Chōtā Mūrgabi	Teal.
Chōtā Titūr	Little Bustard.
Chūkār	Chukor.
Dŏr Fākhtā	Ring Dove.
Dūbārū	Tufted Duck.
Fākhtā	Dove.
Grăm Pāi	Spot-billed Duck.
Ghūgū	Dove.
Girja Girri Girria	Cotton Teal.

Gūgrāl	Spot-billed Duck.
Gūlū Gūndlū	Bustard Quail.
Hāns	Goose.
Hăriāl	Green Pigeon.
Hobāra	Houbara.
Jŭngli Mūrghi	Jungle Fowl.
Kăbutar	Pigeon.
Kăker	Swamp Partridge.
Kālā Titār	Black Partridge.
Kālā Titār	Painted Partridge.
Kālesur	Kalij Pheasant.
Kalij	Kālij Pheasant.
Kărchiyā	White-eyed Duck.
Kerrā	Common Teal.
Khair Butai	Blue-breasted Quail.
Kŏkilā Kŏklā	Kokla Green Pigeon.
Kŏklās	Koklas Pheasant.
Kyāh	Swamp Partridge.
Lăl	Brahminy Duck.
Lāl Chonch Lāl Gir	Red-crested Pochard.
Lăwā	Button Quail.
Lerwā	Snow Partridge.
Lōwā	Bush Quail.
Likh	Lesser Florican.
Milā	Gadwall.
Mōnāl	Monal Pheasant.
Mōr	Peafowl.
Năklā	Comb Duck.
Nilsir Nir-rūgi	Mallard.
Ohāri	Painted Snipe.
Pāhāri Bhăt Titār	Large Sand Grouse.
Pāndăk	Dove.
Perki	Dove.
Peura	Hill Partridge.
Plāsh	Koklas Pheasant.
Rāj Hāns	Goose.
Rām Ghugu	Bronze-winged Dove.
Săn	Pintail Duck.
Serōti Fākhlā	Red Turtle Dove.
Silāhi Silhi	Whistling Teal.
Simtitār	Woodcock.

Sinkpār	Pintail Duck.
Sisi	Seesee Partridge.
Sŭrkhāb	Brahminy Duck.
Tāgdār	Great Indian Bustard.
Taus	Peafowl.
Tidāri	Shoveller.
Tilūr	Houbra.
Titār	Grey Partridge.
Tūsāl	Bar-tailed Cuckoo Dove.
Yīt	Burmese Silver Pheasant.

THE COMMON BIRDS OF INDIA

THE DUCKS AND THEIR RELATIVES.

I.—The Resident Ducks.

Most people recognise a duck when they see one waddling about on the ground or swimming on the water, or when held in the hand. In India a great many people can go " one better " and " spot " a duck when they see it on the wing.

For the benefit of the few who have not mastered the A. B. C. of the Anatidæ, let me say that in order that a bird can be a member of the duck club it must fulfil the two following conditions. Its three front toes must be joined together along practically their whole length by a web, and the bill must be straight and flattened, having both chaps or mandibles armed with transverse ridges or teeth, known technically as lamellæ.

If your cook produces a bird which he assures you is a duck, but which does not possess both these qualifications, decline to have it cooked. It may taste well, but the chances are that it will not.

To the experienced eye nothing is easier than to distinguish a duck from any other kind of bird when on the wing, but it is not very easy to explain how this is done. A duck, except when about to alight, never sails on outstretched wings. Its flight is swift and the wings move rapidy all the time. The body is rounded and the tail is short. During flight the neck is stretched out. Imagine a Schweppe's soda-water bottle flying through the air on rapidly-plied pointed wings and you have some idea of how a duck looks when it flies overhead at a distance of fifty yards or so.

The only bird that is likely to be mistaken for a duck when on the wing is the coot. The dark colour, the more pointed bill, the more laboured flight during which the long legs and toes project behind the tail, the fact that before he can rise from the water he has to run along the surface for a few paces, and the confiding habits should suffice to enable the tyro to differentiate the coot. If a duck resemble a bottle of Schweppe's on wings, the coot may be likened to a bottle of Bass similarly circumstanced. And when you have by accident felled a coot, his white moorhen-like bill, and the fact that his feet are not webbed but have lobes on the toes, soon show you that you have not secured a duck. To Englishmen, the coot is not a good table bird, but the Indian boatman likes him.

Having learned how to distinguish a duck from other birds, the intelligent sportsman usually wants to know to what species any particular specimen he shoots belongs, if only to enable him to differentiate between those that are good table birds and those that are not, for, alas! all duck are not nice to eat, as everyone who has tried to make a meal off a brahminy knows.

The differentiation of the various Indian ducks is not a difficult matter, because the majority have very distinctive plumage, the number of species is small and of these several are so rare as to be almost negligible quantities. This is where the average book on ornithology is irritating to the sportsman. It gives equal prominence to the common and the uncommon species, which serves to confuse.

For example, I have been told by more than a score of sportsmen at different times after they have returned from a shoot in the United Provinces that they have shot a golden-eye. I always politely tell such shikaris that I have not the least doubt that they have made a mistake, that the bird they have shot is the Tufted Duck (*Nyroca fuligula*), of which the eye is golden-yellow, the golden-eye (*Clangula glaucion*) being a bird that very rarely visits India.

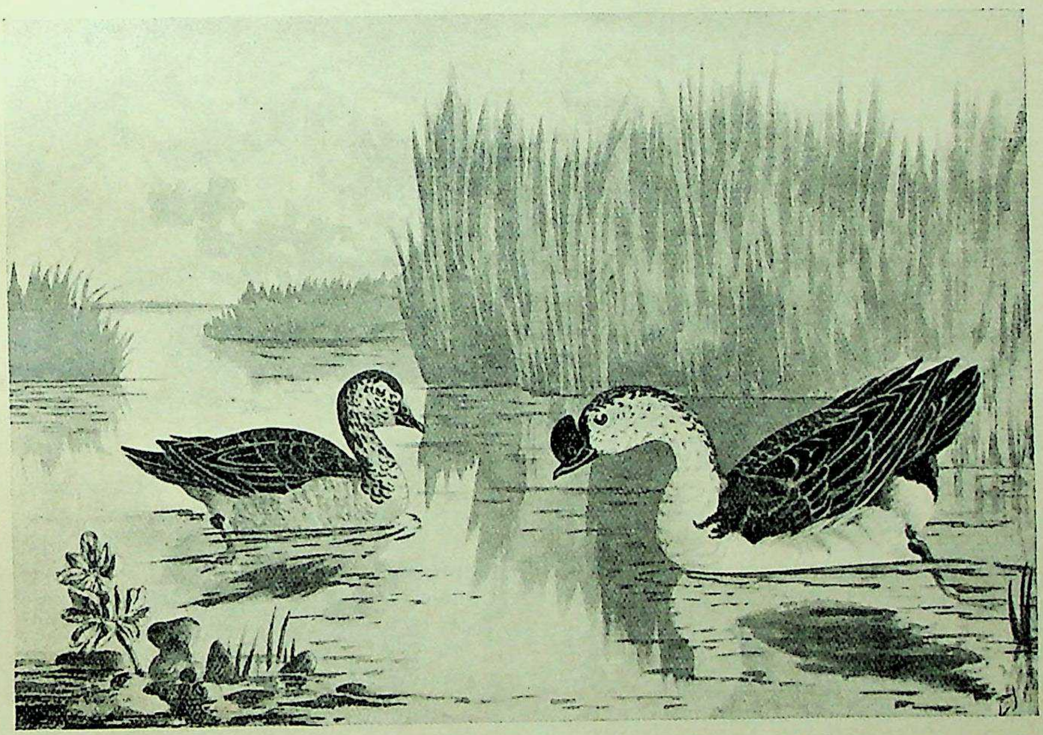
But enough of skirmishing ; let us now come to grips with our subject, which is 'The Resident Ducks of India'. There are only five of these commonly met with—namely, the *nukta* or comb-duck, the cotton-teal, the spotted-bill and the larger and the lesser whistling teals. All the other ducks that we see in India leave us in April or May to go to their breeding grounds in Siberia or Tibet, and they do not return until the beginning of the cold weather. Hence it follows that any duck you see in June, July or August must belong to one or other of the five species abovenamed. It is quite easy to distinguish between these five species.

Let us lead off with the *nukta* or comb-duck (*Sarcidiornis melanonotus*). He is entitled to this honour on account of his size. The comb-duck is as big as a goose, the drake being fully two and a half feet in length, and the female about four inches smaller. It is one of the most confiding of the ducks. As it flaps along with somewhat heavy flight for a duck, it looks like a white goose with black wings. Mr. Levett-Yeats having contributed an excellent drawing of this bird, a long description on my part is quite superfluous.

The drake, you will observe, is making his bow to his lady-love. It is he that has what looks like a piece of black indiarubber stuck on to his upper mandible. The hen goes through life without this appendage, which is larger in the breeding season than at other times. The back and wings in both sexes are black, which, on close inspection, is seen to be glossed with bronze-green and purple. The head and neck are white, well spotted with glossy black. This kind of spotting is very uncommon in Nature, so much so that, did not the comb-duck appear all over India in the wild state, one would certainly take it to be a product of the farmyard that had got loose.

The comb-duck is a tolerable bird for the table.. Like most of its family, it spends by far the greater part of its time in the water, but is quite at home in a tree. While not one of the diving ducks it can dive when occasion requires.

As soon as the hot weather sets in the *nuktas* pair off, being doubtless well-pleased that the noisy crowd of migratory ducks that took up so much of the *jhil* in the cold weather have departed and left them in peace. Directly the monsoon has burst each pair selects a nesting site, which is usually in a tree near water, but, where no convenient tree is available, the birds build among the reeds and rushes that abound in most *jhils*. The nest is a collection of twigs with a few leaves and feathers and a little grass by way of a lining. The nursery is usually placed in a hole in a tree trunk, or often at the place where the trunk of a mango tree splits up into a number of stout branches. If the nest be placed among rushes, these take the place of twigs in its structure. A large number of eggs are laid, a clutch of sixteen being quite a common occurrence. The eggs look like oval white billiard balls.



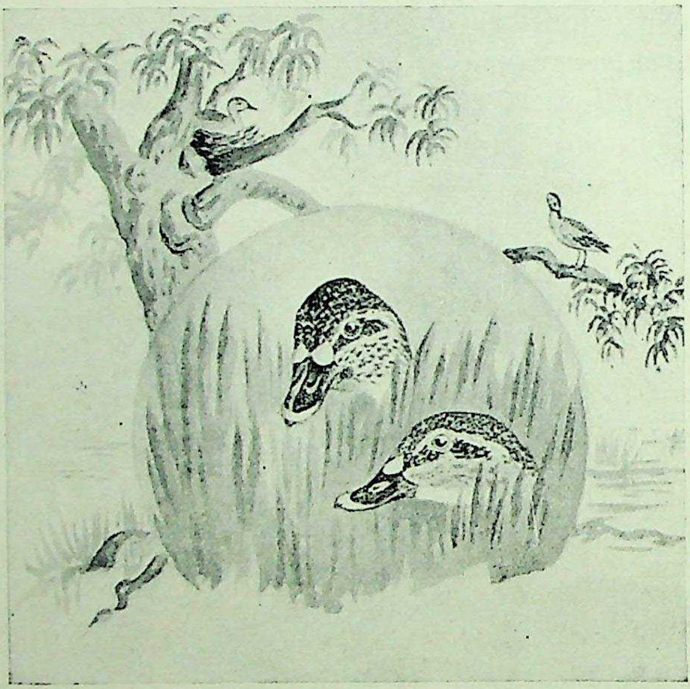
COMB-DUCK: DRAKE AND DUCK. About $\frac{1}{13}$ natural size.

The spotted-billed duck (*Anas poecilorhyncha*) is a larger bird, being about two feet in length. The sexes dress alike,—both affecting sober plumage. Here let me talk a little bit of evolution, not the orthodox kind you will find in the text-books, but the kind of evolution that arouses the indignation of museum and cabinet naturalists. It is possible to divide the ducks into three well-marked classes:—

I. Those in which both sexes have dull plumage.

II. Those in which the drake is showy and the hen has dull plumage.

III. Those in which both sexes have bright plumage.



HEADS OF TWO SPOTTED-BILLED DUCKS. (ANAS POCCILORHYNCHAS) $\frac{1}{6}$ natural size. TWO WHISTLING TEALS (DENDROCYCNA JAVANICA) $\frac{1}{34}$ natural size AND NEST.

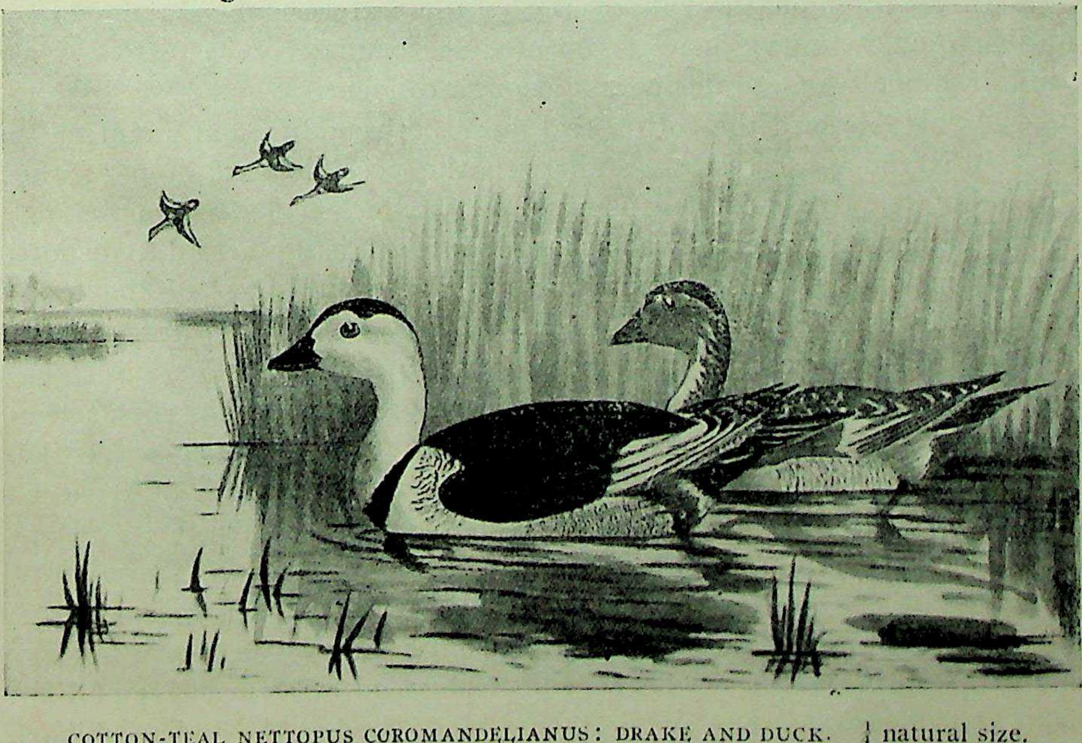
Now I believe, and my belief is shared by an increasing number of observers, that evolution proceeds by jumps and not by scarcely perceptible gradations. The theory which I hold is that originally all ducks were dull-coloured like the spotted-bill, that there is an inherent tendency, implanted in all the duck tribe, to become brightly coloured, that if we could look a few thousand years ahead we should find that all ducks and drakes were birds of bright plumage.

I assert, at the risk of incurring the wrath of suffragettes, that in travelling along the evolutionary course, it is invariably the drake who leads the way. He takes the first step, and the female may, or may not, catch him up before he takes the next step, but she never forges ahead.

Ducks of class I, like the spotted-bill, are still in an early stage of evolution. Ducks of class II, as, for example, the mallard or wild duck, have progressed farther along the evolutionary path. Ducks of class III are the pioneers of evolution. As an example of such, I may cite the familiar brahminy duck.

Both the male and female spotted-bill wear the sombre brown plumage which we usually associate with the female. The majority of the feathers of the plumage are brown with paler edges, so that the bird looks rather as if it were covered with scales instead of feathers. But the spotted-bill has managed to acquire some touches of colour to enliven its quaker-like dress. The birds wear red or orange stockings. They have a metallic green wing-bar with a narrow edging of white. In addition to this, there is a white patch on the wing. There is also a white patch on each side of the body near the tail, and, as this duck swims high in the water, it is possible to recognise it at too great a distance to distinguish the spots on the bill. After the bird has been shot, there is a safe and easy way of identifying it, and that is by means of the spots on the bill, from which the bird derives its name. At each side of the base or root of the bill there is a red or orange patch, and a broad band of bright yellow runs across the tip. All the rest of the bill is black.

The spotted-bill nests in the rains. The nest is usually placed only a few inches above the surface of water in rushes. It is a platform of rushes, about a foot broad, rounded off at the corners, some four inches deep at the edges and two at the centre. The average clutch consists of about eight eggs, but one may see as many as a dozen in a nest. The eggs are white or pale grey, and never ivory-coloured like those of the comb-duck and the cotton teal.



COTTON-TEAL NETTOPUS COROMANDELIANUS: DRAKE AND DUCK. ¼ natural size.

The cotton-teal (*Nettopus coromandelianus*) is the smallest of the duck tribe, being no larger than a pigeon; the bill is less flattened than that of all the other ducks, resembling that of a goose in some respects, and for this reason Jerdon called the bird the goose teal. But it is incorrect so to describe it as, or to term it, a gosling. Its bills has the ordinary ridging of that of a duck and not the teeth of a goose. Again, there is nothing goose-like in the habits of this sprightly little dandy. Geese live almost exclusively in dry land: cotton-teal are rarely seen walking, but are much addicted to perching on trees. Lastly, there are many anatomical differences between the cotton-teal and the goose.

Thanks to Mr. Levett-Yeats's picture of a pair of cotton-teals in breeding plumage, there is no need for me to describe the birds when they are thus arrayed. In the picture the drake is in front. In reproduction the chin and throat of the duck have come out rather too dark.

In the cock the prevailing hues are black, glossed with green, and white; in the hen they are brown and white.

In the winter the drake loses his black necklace. When on the wing he looks very handsome; his pinions have then the appearance of being bordered with white, because the narrow black tips of the wing feathers are not noticeable.

The cotton-teal has a very curious call, which, according to some people, resembles the words "Fix bayonets." Those who hold this belief can never have drilled with the I. D. F. If any non-commissioned officer gave that word of command, so that it resembled the call of the cotton-teal, he would soon find himself reduced to the ranks!

In my opinion the call of the cotton-teal resembles the words "quack-quack, quack-quack," repeated softly and *very quickly*. The call, if difficult to describe, is easy enough to identify.

As a table bird the cotton-teal lacks both quality and quantity.

It is the most restless and, with the possible exception of the whistling teal, the most confusing of all the ducks. It frequents quite small patches of water as well as large *jhils,* and is not afraid to disport itself on ponds in close proximity to villages. It is one of the commonest ducks of Bengal.

Cotton-teal nest in July and August, usually in holes in mango or other trees, often at a distance from water. Sometimes they select as a nesting site a hole in a ruined house or temple. The eggs are like those of the comb-duck, but are, of course, much smaller. The nestlings are dark-brown birds, striped and spotted with white.

The last of the resident ducks are the whistling teal. These birds always give me the impression that they are not proper ducks. As a flock of them comes flapping along within a few yards of the muzzle of your gun, uttering a wheezy whistle instead of a quack, it is difficult to believe that they are not some kind of what the Indian shikari calls *kuchnai*. Like these, the whistlers remain on the *jhil*, flying round in circles, long after all the duck, except the cotton-teal, have left the tank. Their body is not "tubby" like that of the orthodox duck, but slim. If we continue the bottle simile, the whistler looks like a miniature Rose's Lime-juice bottle on rounded wings. Nevertheless, the whistling teal have the bill and webbed feet that qualify for admission to the duck club. The features described above, together with the black rounded wings, render it very easy to distinguish whistling teal when on the wing.

After they have been bagged they are readily identified, being the only brown duck of which the wings are nearly all black.

The upper parts of the whistling teal are brown, and the wings black with a chestnut patch. The under parts are pale reddish brown.

There are two species of whistling teal—the whistling teal or the lesser whistling teal (*Dendrocycna javanica*) and the large whistling teal (*Dendrocycna fulva*). The former is by far the commoner species. It is about 17 inches long, while the large species is 20. Both are much alike in colouring, and there is no sexual difference. But it is quite easy to differentiate between them because the smaller species has a large patch of chestnut feathers at the place where the tail joins the back, the corresponding patch in the bigger species being a cream colour. Whistlers afford poor sport and make but indifferent eating. They are more difficult to retrieve than to shoot, because they are good divers.

Like the other resident ducks, whistling teal breed in July and August. The nest is often in a hole in a tree. Frequently they build a stick nest in a tree or utilise one previously occupied by some other bird. Occasionally a whistler builds a nest in grass or bushes near water.

In order to make this account of the resident ducks a complete one, mention must be made of three species which are so rare or locally distributed that they may be neglected by the average sportsman.

The first of these is the white-winged wood duck (*Asarcornis scutulatus*). The only part of India in which this bird is likely to be found is Assam, and there only in forest pools and streams. This is the largest of the Indian ducks. The head and neck are white with dark spots like that of the comb-duck, but there is no comb. The lower parts are rusty red. The upper plumage is brown. There is a large patch of white in the wing and a blue-grey bar. The sexes are alike in appearance.

The second of these rare duck is the pink-headed duck (*Rhodonessa caryophyllacea*). This is much more widely distributed than the last. According to Blanford, it is fairly common in the districts of Purnea, Malda and Bhagalpur and in Tirhoot, and occurs throughout Bengal

Assam and the U. P. During the ten years I have spent in the U. P. I have never come across this bird. Apparently it is gradually becoming extinct, and should therefore not be shot. Finn wrote in 1915: "When I was in India in the 'nineties, one could generally see about half-a-dozen in the Calcutta market in a winter, though as much as Rs. 15 each would be asked for them; they were kept alive, having a well-known value as ornamental birds; but now, I am told by friends from Calcutta, that an offer of Rs. 100 per bird would probably not produce a single specimen. This bird is easy to identify." I cannot do better than quote Finn's excellent description, as I do not remember having seen the bird alive.

"The pink-headed duck stands quite alone in colouration among our birds. Its body is as black as ink—the brownish Indian ink; its head is as pink as new blotting paper, in the case of the drake at any rate; the duck's head is like the same pink blotting paper after it has become faded and soiled, with a long black blot on the crown. Her plumage generally is duller and rustier than the drake's and her bill is black, whereas his is fleshy white; but the general resemblance is close."

The third of the rare residents is the Andaman teal (*Nettium albigulare*)—a dark-brown bird with white throat and neck. The fore part of the wing is white, the hind part is black, edged narrowly with white and a narrow longitudinal green band in the middle.. This bird is confined to the Andamans and the Islands of the Malay Archipelago.

II.—Migratory Ducks: The Divers.

All ducks can dive when necessity arises. Some rarely do so, because they obtain their food from the surface of the water or pick it off the bottom where the water is shallow enough to allow them to reach the ground by tilting up their bodies so that the whole anterior part is submerged. A few ducks, however, feed largely under water. These are professional divers. They possess, in the form of a lobe to the hind toe, a special apparatus to enable them to swim under water. If the foot of any duck be examined, it will be found to have four toes. Three of these are long and point forward and are joined together almost their whole length by a web of skin. The fourth toe points backwards, and is small in all but the diving ducks. In these it is larger and is provided with a lobe. This lobed toe, taken in conjunction with the fact that the outer toe is as long or longer than the middle one, serves to distinguish the professional from the amateur diver. As the body of a duck under water offers far more resistance to the water than it does when the bird swims on the surface, it is obvious that those ducks which feed largely under water need more powerful propellers than those that seek their subsistence on the surface, and Nature has provided for this want.

There are four professional divers that visit India every winter in large numbers. These are all more or less closely related to one another and are known as pochards. According to Dr. Blanford, this word should be pronounced "pokard." He gives as a reason for his assertion the fact that the only pochard that visits England (*Nyroca ferina*) is known in some parts of the country as the poker.

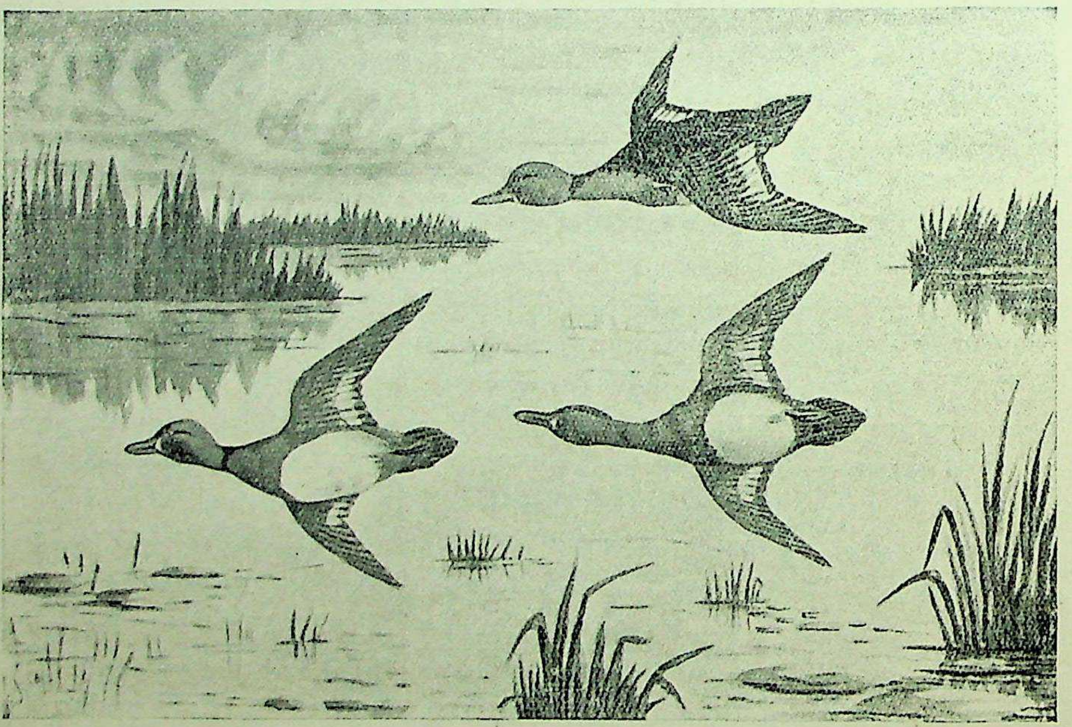
I submit that the existence of the local English names for the bird "Red-headed Poker" and "Blue Poker" is no reason for mispronouncing the word pochard. The verb to poach can be used both transitively and intransitively. As a transitive verb, it is a softened form of the verb "to poke" and has the same meaning, namely, to stab or pierce. The word "pochard" or "poachard" means "one who pokes or poaches." Probably this duck is called the poker on account of its diving habits. It is the only diving duck found on fresh water in England. It is, therefore, the duck that pokes in the water for its food. Montagu tells us that pochards are not welcome visitors to decoy pools in England, "for by their continual diving they disturb the rest of the fowls on the water and prevent their being enticed into the tunnels."

Sufficient has, I think, been said to demonstrate that the "ch" in pochard should be soft,, as every sportsman in India pronounces it. The pochard which visits England, and which is variously known as the pochard, the dun-bird, the red-headed pochard, visits Northern India in large numbers. Most bags of duck shot in Northern India contain a fair percentage of pochards, but the further east one goes the less abundant is the pochard, and it is rarely seen so far south as Mysore.

Finn well describes this bird as "a squat, thick-set, big-headed duck with a very short tail, which is not noticeable on the water, as the bird swims very low, especially astern." When on the water it keeps its neck drawn in. The drake has the head and neck deep chestnut. The breast, rump, and stern, *i.e.*, the patch of feathers under the root of the tail, are black, the rest of the plumage looks grey, being pencilled with fine wavy lines of black or grey on a whitish background. The female differs from the male in having the head and neck nut-brown. The breast, belly and stern are white, clouded with brown. The cock is rather a showy bird on account of his tricoloured plumage. The hen is very quietly dressed. The pochard is the best of the diving ducks for cooking purposes. It comes to India late in October or early in November and departs in March. It usually congregates in considerable flocks on *jhils* with plenty of open water in the middle. The wings are rather small in proportion to the size of the body, and, for this reason, pochards are rather slow in rising from the water. Their flight is rapid, but speed is attained only by a very vigorous flapping of the small pinions. It is this that gives rise to the peculiar rustling sound which every sportsman notices when a flock of pochard is speeding through the air overhead.

Pochards feed largely on roots, stems and leaves of submerged plants, but they also eat insects, grubs, worms, tiny frogs and molluscs. The contents of the stomach usually include some sand and fine pebbles.

The white-eyed pochard or white-eyed duck (*Nyroca ferruginea*) as it is often called is probably the commonest duck in the United Provinces. It is also abundant in Western and North-Western India and in Mesopotamia. Like the pochard, it does not visit the southern portions of the peninsula. I did not come across it in the vicinity of Madras. It is fairly common in Bengal and Assam.



WHITE-EYE (NYROCA FERRUGINEA) $\frac{1}{6}$ natural size.

In this, as in all other pochards, the sexes differ in plumage. The drake has the head, neck and breast chestnut or mahogany red, the abdomen is pure white where it meets the dark breast, but becomes tinged with brown behind. The tail, wings and the remainder of the upper plumage are dark brown, almost black. There is a good deal of white in the wing, not visible when the bird is resting on the water, but conspicuous during flight as a white bar.

The duck is a dull replica of the drake, her head and neck being browner, the upper plumage is brown, and the white of the abdomen is sullied. In both sexes the eye is white—this renders the species easy to identify when a specimen is held in the hand. During flight it is not difficult to "spot" this species or that already described. To continue the Schweppe's soda-water bottle simile: Imagine such a bottle to be made of dark-red glass with a large, white label placed rather low down on the bottle; put a pair of wings to this and send it through the air. If the wings have some white in them, you have a tolerable imitation of a white-eyed pochard. If the label be very white, the resemblance will be to the drake; if dirty looking and not sharply marked off from the dark part, the imitation will be of the duck.

As the white-eye usually affects weedy tanks, and as it invariably dives when the sportsman has only winged it, a great many wounded birds are lost. After you have bagged a white-eye you have not secured much of a dish for the table, as the flesh tastes rather rank. If the truth must be told, there is scarcely a wild duck of which the taste is equal to that of the domestic bird.

The white-eye comes to India in the latter part of September or early in October and remains with us until well on in March, when it goes north to breed. It does not migrate so far as most of our non-resident ducks, and numbers breed on the lakes of Kashmir. Hume tells that in his time boat-loads of white-eyes' eggs used to be brought to the Srinagar market during the season. I understand that this practice has since been stopped by the Government.

Not having visited Kashmir I am unable to give any first-hand information regarding the nesting habits of this species.

Says Hume, of the white-eyes in Kashmir: "They lay in June, and, according to my native collector, who examined a vast number of their nests, build a moderate-sized nest of rush and sedge in amongst rushes, reeds and water weeds, sometimes on the ground and sometimes more or less floating and supported on masses of water plants. The interior of the nest is composed of rather finer materials, and the eggs are generally more or less intermixed with feathers and down. Ten was the largest number of eggs found in any nest."

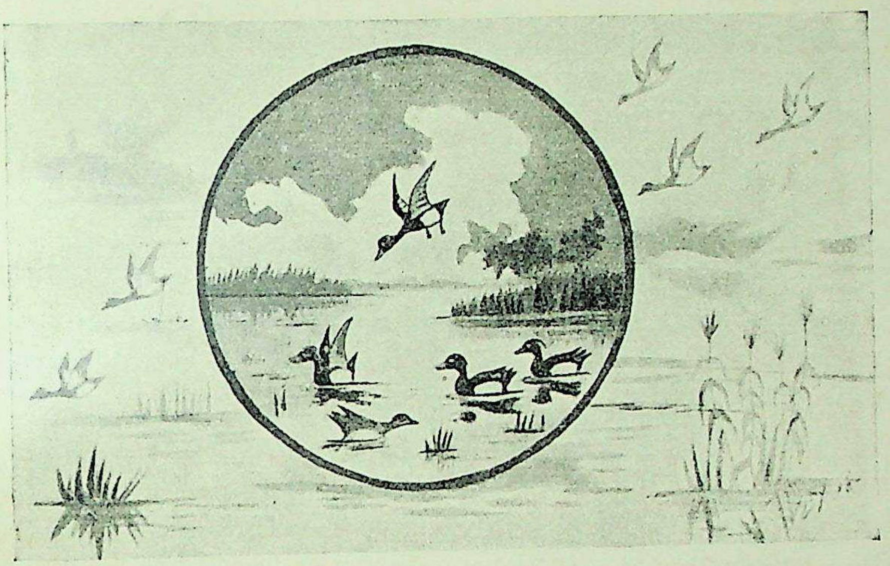
Before leaving the white-eye, it seems desirable for the benefit of sportsmen in Eastern Bengal and Assam to say a few words about another species of white-eye. This is known as the eastern white-eyed pochard or duck, the green-headed white-eyed pochard, or Baer's white-eyed pochard. Ornithologists, who are never so happy as when manufacturing a new species or changing the name of an existing one, call this bird (*Nyroca baeri*), or, at least, they called it so a few years ago. What they call it to-day I neither know nor care! I have no patience with the constant tinkering with names that is going on, and, as to the latest abomination of saddling each bird with a sub-specific name in addition to its specific and generic names, I regard it as an invention of the Evil One, and would that the man who introduced the system had been drowned at birth!

The range of the white-eye extends eastwards from Western Europe to Japan. Those found in Eastern Siberia, China and Japan differ slightly in appearance from those found further west, and constitute *Nyroca baeri.*

Occasionally, a number of eastern white-eyes elect to take up their winter quarters in Assam and Eastern Bengal. It was my friend, Frank Finn, who first discovered this fact. Writing in *Indian Sporting Birds*, published in 1915, he says: " Even in its ordinary wintering-places in China, the eastern white-eye seems somewhat irregular in its occurrence, and little is really known about it except that it breeds in East Siberia. There has certainly been a considerable winter western movement of the species of late years, beginning apparently with the year 1896, when it turned up in the Calcutta market, by no means an unexploited locality. The rush appeared to culminate the next winter, the birds then becoming gradually scarcer: in 1902, up to December, when I left India for good, there had been none in; but about February was the likeliest date for them; in 1896-97 they were as common as ordinary white-eyes. Mr. Baker also got them, after the occurrence of the species here was made known, from Cachar, Sylhet, near Bhamo, and the Shan States, which is what one would expect, although the birds do not seem to have been numerous as they apparently were in Bengal; he only got three from Burma, for instance."

Every sportsman who shoots a white-eye in Bengal or Assam should make a point of examining it to ascertain whether it is the eastern or the western form. Almost the only difference between the two is that the eastern species has the head green, or rather black with a green gloss. This shows up very markedly against the chestnut neck. The hen has a rusty patch between the eye and the beak, and the green on her head is not so glossy as that on the drake.

Let us now pass on to the tufted pochard or duck (*Nyroca fuligula*). This is, perhaps, not entitled to a place among the common ducks of India, because a big bag of tufted pochards is not often obtained; on the other hand, most bags of duck in Northern India include one or two tufted pochards. This species affects chiefly large *jhils* where the water is deep. The bright yellow eye is the only piece of colour sported by the drake. He is black all over, save for a white bar in the wing and some white on the abdomen; indeed, on account of the distribution of the black and white on his plumage, he might well be called the magpie pochard. The tuft of crest consists of a few elongated feathers that hang down the back of the head like the more refractory back hairs of a boy whose head has been well greased. The female tufted pochard is a dull edition of the drake, being brown where he is white; her crest is shorter and inconspicuous. She is very like the female white-eye, but may be differentiated at a glance because her stern is brown instead of white.

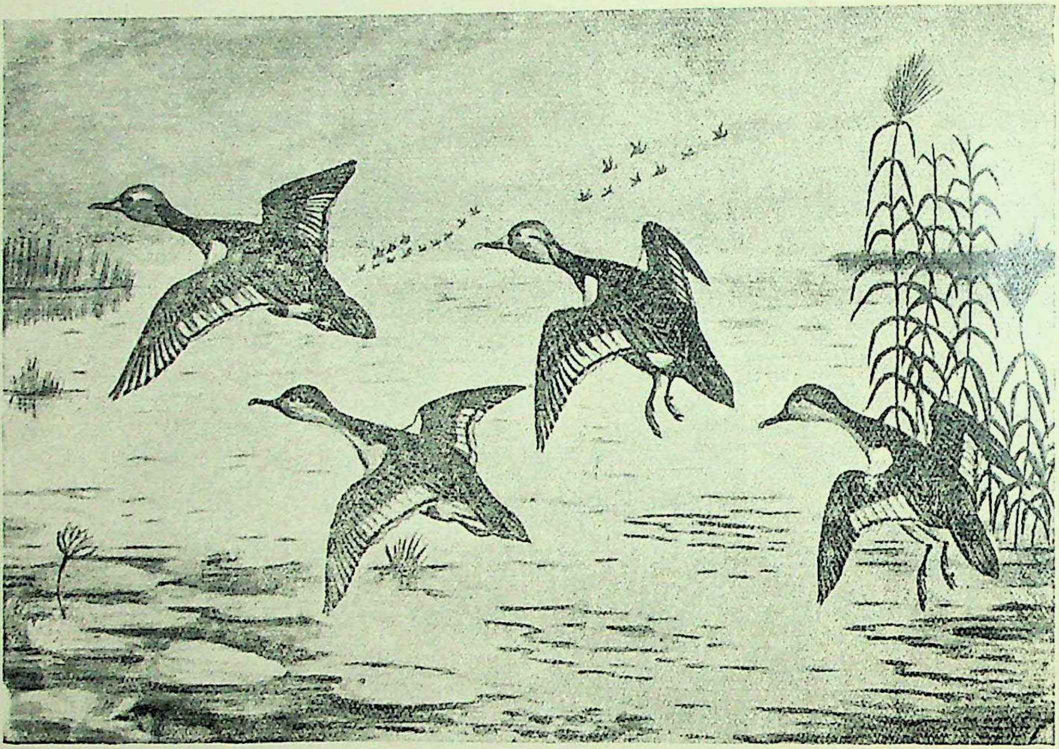


TUFTED POCHARD. (NYROCA FULIGULA) ¼ natural size.

During flight it is almost impossible to distinguish between a hen white-eye and a hen tufted duck. The drake crested pochard may be recognised by his much darker colour. He may be likened to a black Schweppe's soda-water bottle of which the white label is rather small —a bottle with white wings.

As I have already mentioned, this species is often mistaken for the golden-eye (*Clangula glaucion*). Nothing is easier than to distinguish between the two. The golden-eyes have yellow legs and toes, those of the tufted pochard and the others previously described are black. The drake golden-eye has a green head with a large white patch on each side below the eye. But the golden-eye is not likely to be seen by any sportsman, unless he be shooting on the Upper Indus or on a hill stream in the Lakhimpur district.

The red-crested pochard (*Netta rufina*) displays marked sexual differences. It is known to Indian shikaris as the *lal sir*. The drake is a handsome fellow. His crest is very different from that of the crested pochard. The feathers on his head project outwards, instead of lying one on top of the other like the tiles on a roof; the result is that the head of the red-crested pochard has somewhat the appearance of a baby's ball made of dull red worsted. Into this red ball a bright vermilion bill is inserted. The remainder of the upper plumage is dark brown. The wings display patches of brown, grey and white. The last forms a wing-bar which is white in front, becoming grey behind. The breast and the whole of the lower parts, except a patch on each side of the abdomen, are black, so that the drake as he flies overhead looks like a black bottle without a label, into the mouth of which has been forced a large champagne cork covered with a red cap. The feet are red with black webs. The hen differs greatly in appearance from the drake, being brownish grey above and sullied white below. The females of all the species of pochard described above have the breast dark; thus the light breast and the red feet serve to differentiate the female red-crested pochard from the other ladies of the clan. Her eyes are brown and her bill black with the tip reddish. Her wing bar resembles that of the drake.



RED-CRESTED POCHARD. (NETTA RUFINA) $\frac{1}{15}$ natural size.

I believe that I am right in saying that none of the pochards "quack." Their notes are croaks rather than quacks, and may be syllabled as "Kurr," "Koori" or "Kiri," usually uttered just when the birds are rising from the water.

Red-crested pochards often occur in large flocks and frequent rivers as well as *jhils*. They are abundant during the cold weather in all parts of Northern India, and stragglers occur in South India. This species is one of the best of the ducks in the eyes of the sportsman, being a wary fowl and having a flavour superior to that of most pochards.

Hume gives the following account of how he circumvented this species in the Etawah district. " Before dawn I was out in my punt, working softly round the margin to the western side, so as to have the fowl, when twilight broke, against the daylight sky....Day dawned and I could soon see a dense mass of fowl . . . probably fully a quarter of a mile off . . . Lying down I paddled towards them. Very soon a fresh north-west wind sprang up against me. Quite a sea rose. I was perpetually grounding, and they were swimming away steadily against the wind, so that it was bright sunlight before I got within two hundred yards, and then I could see they were all red-crests. I had now got into deeper water, and went as hard as I could without splashing; but they swam steadily away, and I must have gone fully half a mile before I had gained one hundred yards on them. Still they had not shown the slightest signs of suspicion (and I knew their ways well), but were swimming gaily on *en masse*, head to wind, as they often will on windy mornings. On I went. I had a long English swivel, carrying a pound of shot (No. 1, I had in) ; there were between two and three thousand of them, as closely packed as they could swim. I was certainly within seventy yards of the hindermost bird; I calculated to get within about forty yards of these and fire over their heads into the centre of the flock. They were close packed and backs to me, so there was little to gain, and possibly a great deal to lose, by flushing them. I was within fifty yards when again I grounded; had I even then fired at once I must have made a very large bag, but I thought I knew that this was only the point of a mound, and I wasted some precious minutes struggling to get over it with the paddles. The nearest birds must have been seventy yards distant before ; seeing I was hard and fast, I snapped an ammunition cap on a little pistol I always carried for the purpose, and raked them as they rose. The next instant there was a whole line of birds fluttering on the water, seven dead, and twenty-one winged. I recovered everyone of them, but it was noon before I bagged the last; and if I had had a desperate hard six hours' work, I hardly remember six hours which I more thoroughly enjoyed."

Of this one may say " *C'est magnifique, mais ce n'est pas le sport!* " In order to complete the account of the diving ducks, mention must be made of the stiff-tail (*Erismatura leucocephala*) and the scaup (*Nyroca marila*), although the chances are at least one hundred thousand to one against a sportsman shooting one of these birds at a shoot in India. The stiff-tail or white-headed duck has a queer-shaped bill, much swollen at the base. The features of the tail are stiff, like those of a woodpecker. The feet are enormous. The crown of the head is black and the face white. The remainder of the plumage is not unlike that of the lesser whistling teal.

The scaup, like the tufted pochard and the golden-eye, is a duck with a yellow eye.

The respective sexes of the scaup are not unlike those of the tufted pochard, but they lack the tuft at the back of the head and the shoulders are white with numerous fine wavy black cross bars in both sexes.

III.—Migratory Ducks: The Smaller Non-Divers.

We have disposed of all the resident and the diving migratory ducks of India.

There remain more than can be conveniently dealt with *en bloc.* I therefore purpose to divide these into the large and the small duck, and to treat of them separately, beginning with the little fellows. Taking the red-crested pochard as a medium-sized duck, its length being 21 inches, we have eight large ducks, all considerably more than 21 inches long, and 19 small ones, all less than 21 inches.

Of the smaller duck, we have previously considered the two species of whistling teal, the pochard, the two kinds of white-eye, the scaup, the golden-eye and the cotton-teal. There remain for consideration five common winter visitors, namely, the gadwall, the shoveller, the wigeon, the common and the garganey or blue-winged teal, and five uncommon ones—the crested, the Andaman and the Baikal teal and the marbled and the white-headed duck.

The gadwall (*Chaulelasmus streperus*) is one of the commonest of the winter visitors to India. Every bag of duck obtained in the United Provinces is certain to contain a number of gadwalls; the same is, I believe, true of Bengal and most parts of Northern India, but, according to " Raoul," gadwalls are scarce in Chota Nagpur. The species does not, as a rule, wander farther south than Mysore. One great drawback of South India is the poor duck-shooting it affords.

When the drake is in full-dress plumage, he differs considerably in appearance from the duck; nevertheless, although a handsome fellow in a quiet way, he is little, if any, more showy than his wife. Both are soberly clothed in brown, after the manner of Quakers. The head and neck of the drake are greyish, speckled with brown. His breast is dark brown, plentifully studded with white crescent-shaped markings. The abdomen is cream-coloured with dark wavy lines, the stern is a beautiful velvety black. In the wing there is a white and a black bar; in front of these is a large but rather ill-defined patch of chestnut. The bill is black and the legs and feet are dirty yellow with some black markings on the webs. It may be thought that this description belies the statement that the drake is soberly clad in brown. As a matter of fact, the general appearance of the bird gives the impression of a dull brown fowl; it is only when the plumage is minutely inspected that all the above details are noticed. The head of the duck is brown and white, the brown predominating above. The rest of the plumage is mainly composed of chocolate brown feathers, with broad buff tips, which are crescent-shaped. The abdomen is white and the wing bars are as in the male, but the chestnut patch in the wing is either wanting or very small. Her bill is dark brown with orange edges. Her feet are like those of the drake.

The fact that the drake is not more conspicuous than the duck is one of the many phenomena that give the lie to the theory, widely held by zoologists, that because the hen is exposed to special danger when incubating, she is unable to assume the plumage of the male. If a bird sitting on eggs had to depend on protective colouring for preservation, she would have a very poor chance of bringing up her family!

Gadwalls are good table birds, and, being rapid fliers, are held in high esteem by sportsmen. They are usually found in small flocks in company with other ducks. Like most of their tribe their diet is a mixed one, they are good walkers, and, in the early morning and late evening, do a good deal of damage to the paddy. They spend the greater part of the day resting on the water in the middle of a *jhil*. They breed in Northern Siberia along with the pin-tail ducks.

The crested or falcated teal (*Eunetta falcata*) is a resident of Eastern Asia and only a few stragglers visit India in winter. Finn, who is perhaps the greatest authority in the world on ducks, and indeed on most birds, objects to this bird being called a teal. He terms it the bronze-capped duck, pointing out that it is too large to be described as a teal. It appears to have affinities with the gadwall. The hen is very like the female of the gadwall, differing mainly in having only a black wing bar, the bill being all black and the feet grey instead of orange. The drake has a curious mane-like crest, from which the species derives one of its names. Another peculiarity of the male is the bunch of long curved slender feathers which project from the wing, looking as if someone had pushed them into the wing by way of a joke! These feathers are falcated or sickle-shaped, hence another of the names by which the bird is known. The head of the drake is chestnut with bright metallic green cheeks, which are prolonged at the back into the long dark green silky crest. The throat and neck are white with a green collar. The bulk of the body plumage has a grey background with black or dark brown markings; these are crescent-shaped anteriorly, becoming wavy lines farther back. The wings are plain grey with a black bar glossed with green. These crescent-shaped markings and dark wavy lines crop up in many species of duck, indicating that the markings on the plumage of ducks are the result of a general tendency to vary in those directions. The colourings and plumage patterns of birds are determined, not by natural selection as those zoologists wrongly assert who are slaves to Darwinism, but by an innate tendency to vary in certain specified directions. The reader may ask why they tend to vary thus: I cannot answer this question, but this inability does not alter the plain fact. I cannot explain why gadwall do not visit Ceylon, but that does not alter the fact that they do not go to that island. It is only when a colour pattern becomes dangerously conspicuous, or is correlated with some physical defect, that natural selection steps in and wipes out the offender.

The showy but vulgar-looking shoveller (*Spatula clypeata*) always puts me in mind of a sweeper dressed up in his gaudy best coat on a holiday. This duck is distinguishable at a glance from every other member of the tribe by its disproportionately large bill, broader at the tip than at the base. The drake, like Joseph of old, wears a coat of many colours. His head and neck are rich glossy green. His breast has the hue of dirty linen and matches the rest of his plumage as ill as does the dirty *dhoti* of the sweeper wearing a magenta velvet coat tricked out with gold braiding. The back is brown, each feather having a pale edge; thus this part of the plumage has the scale-like appearance so characteristic of many ducks. The rump and the feathers above the tail are black, glossed with peacock green and blue. The lower parts are rich chestnut red. The legs are flaring vermilion. The shoulders are bluish grey. In the wing there is a bright green band bordered with white. The female is a brown bird, each feather having a pale margin. There is a good deal of greyish blue in her wings. Her legs, like those of the drake, are bright red, and she has the same spatulate bill, by means of which it is possible to distinguish her at a glance from all other brown ducks.

Before describing the habits of the shoveller it is desirable to say something about the structure of ducks' bills.

In number one of this series it was pointed out that no bird can become a member of the duck club unless it possesses a particular kind of bill. The chief characteristic of the bill of a duck—and the shoveller has this characteristic better developed than any other duck—is the row of thin horny lamellæ, more or less numerous, at the edges. These lamellæ, or transverse ridges, are in appearance like those on the under surface of a mushroom or toadstool. They serve as a sieve. When a duck moves its bill about in water the liquid passes through the sieve, leaving inside the bill any particles it holds in suspension. The meshes of the sieve in the shoveller's bill are smaller than those in the bill of any other duck ; in consequence the shoveller is able to obtain food where most species cannot,—namely, from the scum on the surface of dirty ponds. As Darwin pointed out, the mouth of the shoveller resembles that of a miniature whale-bone whale. Most species of duck have to obtain the greater part of their food by diving or by tilting the body. There is no necessity for the shoveller to do this;

he just paddles about in the water "bibbling" on the surface with his bill. The dirtier the surface the more food he finds, hence his predilection for the unwholesome village pond. The shoveller sometimes takes advantage of the presence of diving ducks to swim about at places where they are diving in order to secure the edible objects sent by them to the surface. When thus engaged, shovellers propel themselves with only one foot; this causes them to swim in circles.

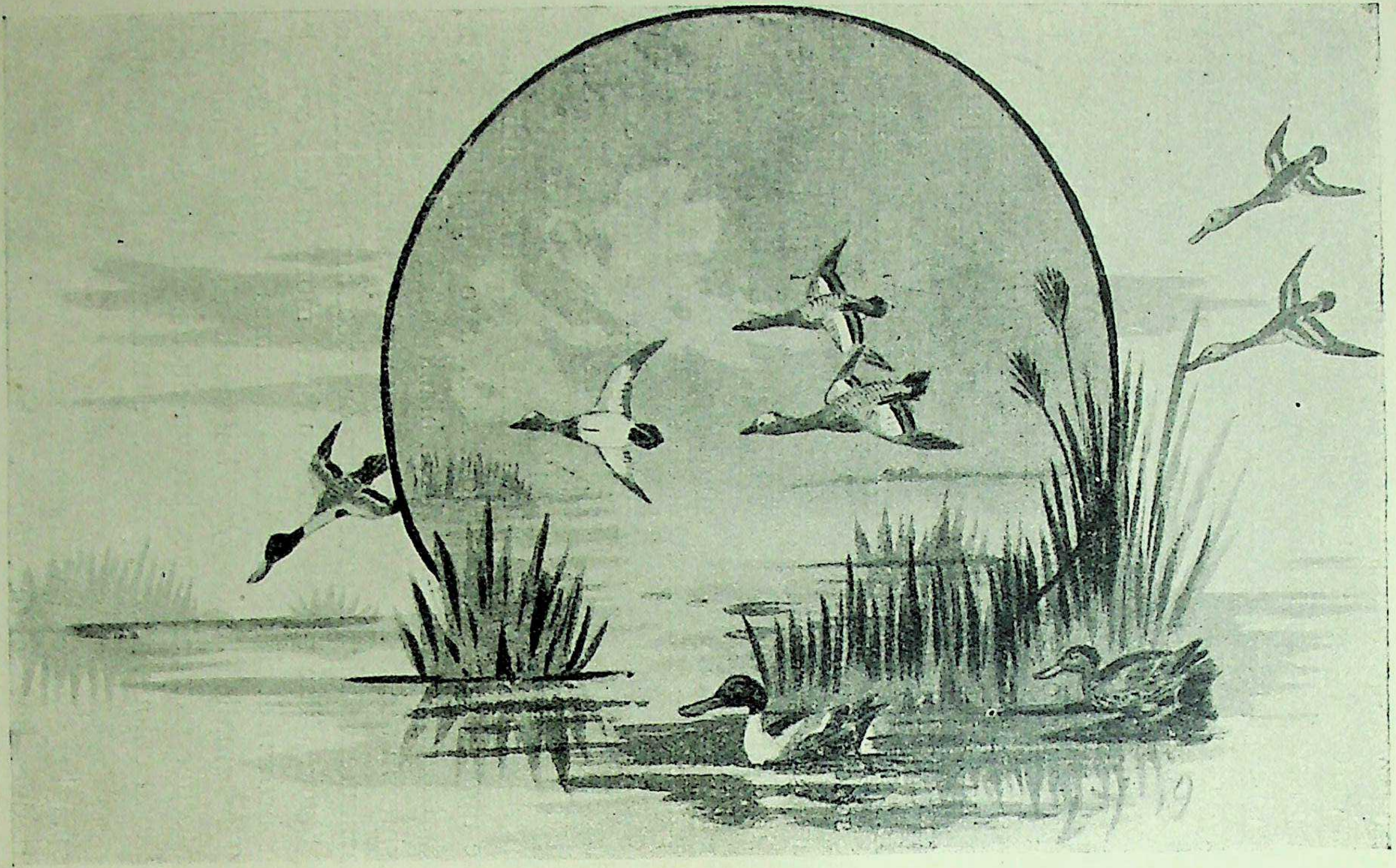
Being possessed of a stomach for all descriptions of food, it is not reasonable to expect the shoveller to be a good table bird. "As regards its value for food," writes Blanford, "there may be some difference of opinion as to which is the best duck for the table, but there is no question that of all true ducks this is the worst." But surely this writer forgot the brahminy duck. I haye never ventured to eat this last, but have partaken of shovellers that tasted well. However, I do not commend the shoveller as a table bird. My impression is that the flavour of the hen is preferable to that of the drake. This may, however, be imagination due to my innate gallantry!

Even as the shoveller is conspicuous for the abnormally large size of the bill, so is the wigeon (*Mareca penelope*) remarkable for the smallness of that organ, which is narrow and is shorter than the head, but of course it is fitted with the lamellæ or teeth which are the hallmark of ducks. The bill of the wigeon is blue-grey, but it has a black tip.

The head of the drake is dull chestnut with some blackish spots on it. The forehead is pale buff—almost golden in some specimens. This yellow blaze (as it would be called in a horse) is a mark which distinguishes the drake wigeon from all other duck. The remainder of his upper plumage is grey, beautifully pencilled with black. The hue of the upper breast varies from salmon to faded lilac. The lower breast and abdomen are white with a black patch under the tail. There is much white in the wing, which is very noticeable during flight. The wing is ornamented by a green bar or speculum, bordered on either side with black. The hen is a brown bird, mottled less conspicuously than most brown ducks. She has sometimes a dash of green in her wings. The small French-grey bill with the black nib serves to differentiate her from all other brown ducks. The feet of both sexes are a dull lead colour. The wings are unusually long for those of a duck.

The sprightly wigeon visits India in considerable numbers every winter. It does not venture far south, and is more abundant in the western than in the eastern districts; but is nowhere very common.

Wigeon usually occur in small flocks and affect chiefly big rivers and extensive lakes. They are fast fliers, being built for speed. They are good pedestrians, as ducks go. They feed largely on grass, but aquatic plants, insects, molluscs and crustacea do not come amiss as



WIGEONS (MARECA PENELOPE) $\frac{1}{19}$ Natural size AND SHOVELLERS (SPATULA CLYPEATA) $\frac{1}{20}$ Natural size.

food. Finn points out that wigeons avoid districts where the rainfall has been unusually heavy, because in such the shore grass, on which they largely feed, is submerged. Wigeon, although they can dive, rarely obtain their food by so doing. The drake utters frequently a curious whistling note.

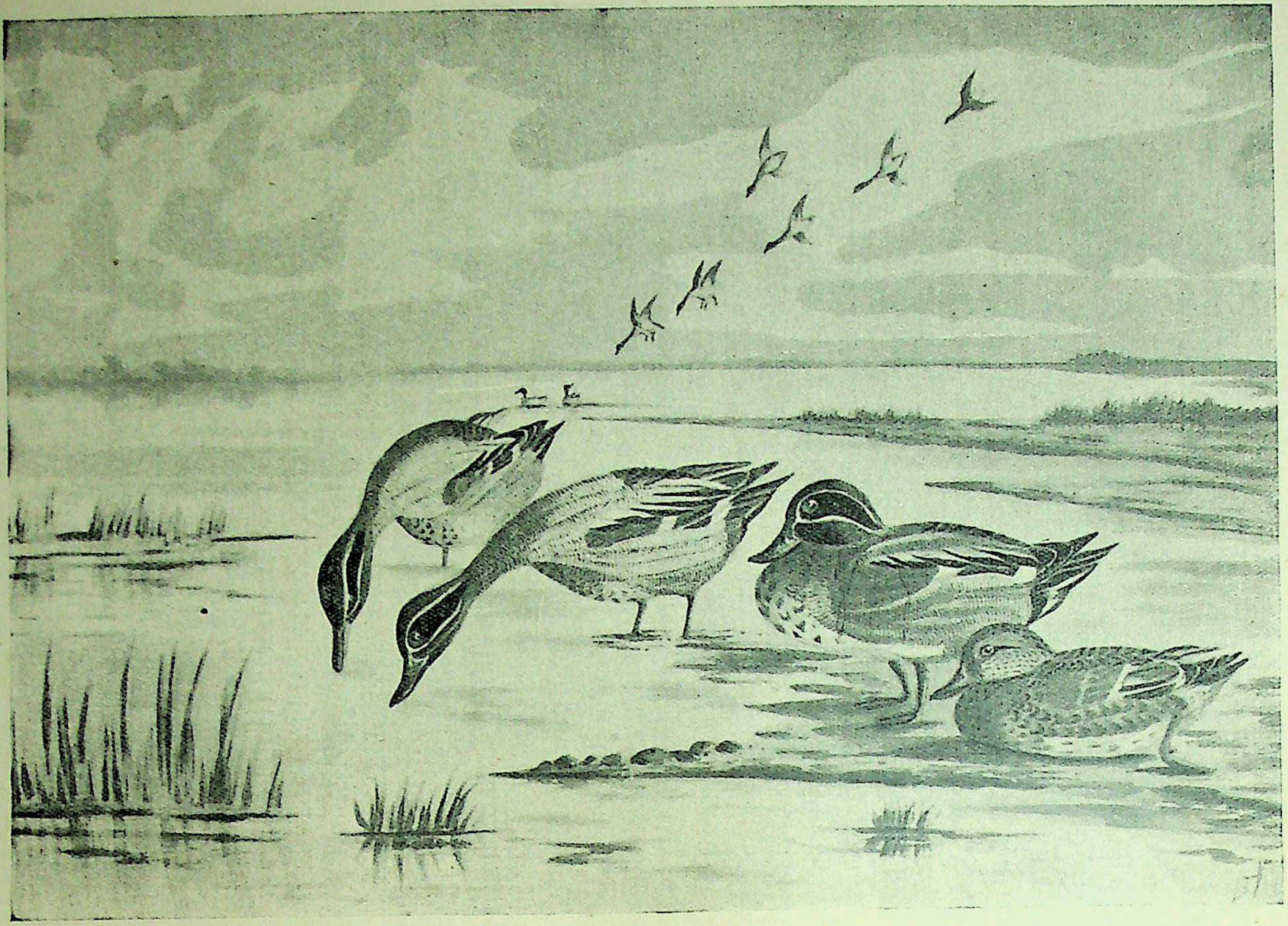
In England the flesh of the wigeon is held in high esteem. Some writers declare that in India it often tastes muddy or fishy. This has not been my experience, and I regard the wigeon, even in India, as a very fair bird for the table.

The marbled duck, or teal, as some call it—*Marmaronetta angustirostris,*—like some human beings who possess very long names, is not much to look at. It has a pallid washed-out appearance, being a brown bird without a particle of bright colour anywhere. As Finn remarks, its colouring recalls that of the sandgrouse. A small duck, with a suspicion of a crest, mottled pale brown and cream above and sullied white below, with no bright colour in plumage, bill or legs, can be none other than the marbled duck. If there were anything in the theory of protective colouring this duck ought to be a denizen of sandy deserts. As a matter of fact, the only places in India where it is common are the rushy marshes of Sind, where it occurs in twos and threes. Stragglers come as far east as Bengal, but the odds are very long against a bag of duck obtained anywhere in Bengal containing a marbled duck, and the farther east the bag be made the longer are the odds.

We now come to four teal which are closely related; some ornithologists go so far as to place them all in one genus. These are the common or green-winged and the garganey teal, which are numbered among the common duck of India, and the Andaman and Baikal teal, which have not that distinction.

The common teal (*Nettium crecca*) spreads itself all over India in the cold weather. It is the smallest of the migratory ducks, being only a little larger than the tiny resident cotton-teal.

The drake green-winged teal is a very handsome bird. So many colours enter into his plumage that were I to attempt to detail them many readers would desire to punch my head! Lest these should combine with the cabinet zoologists who are thirsting for my blood because I take the public into confidence and show them how easy a study Zoology is, I will refrain from lengthy description. Fortunately this is not necessary. Quite apart from the fact that the reader has Mr. Levett-Yeats's picture before him, the species is remarkably easy to distinguish. Both the showy drake and the brown hen have a brilliant metallic-green wing bar. The drake has in addition a chestnut head set off by a broad metallic-green band, bordered with buff, running through the eye backwards, down the sides of the neck. There



Common teal (Nettium crecca) $\frac{1}{6}$ Natural size.

are plenty of other identification marks—for example, the buff patch of feathers with bold black markings under the tail, and the thrush-like markings on the breast. The hen is just a little mottled-brown duck, but she has the distinguishing green speculum or band in the wing.

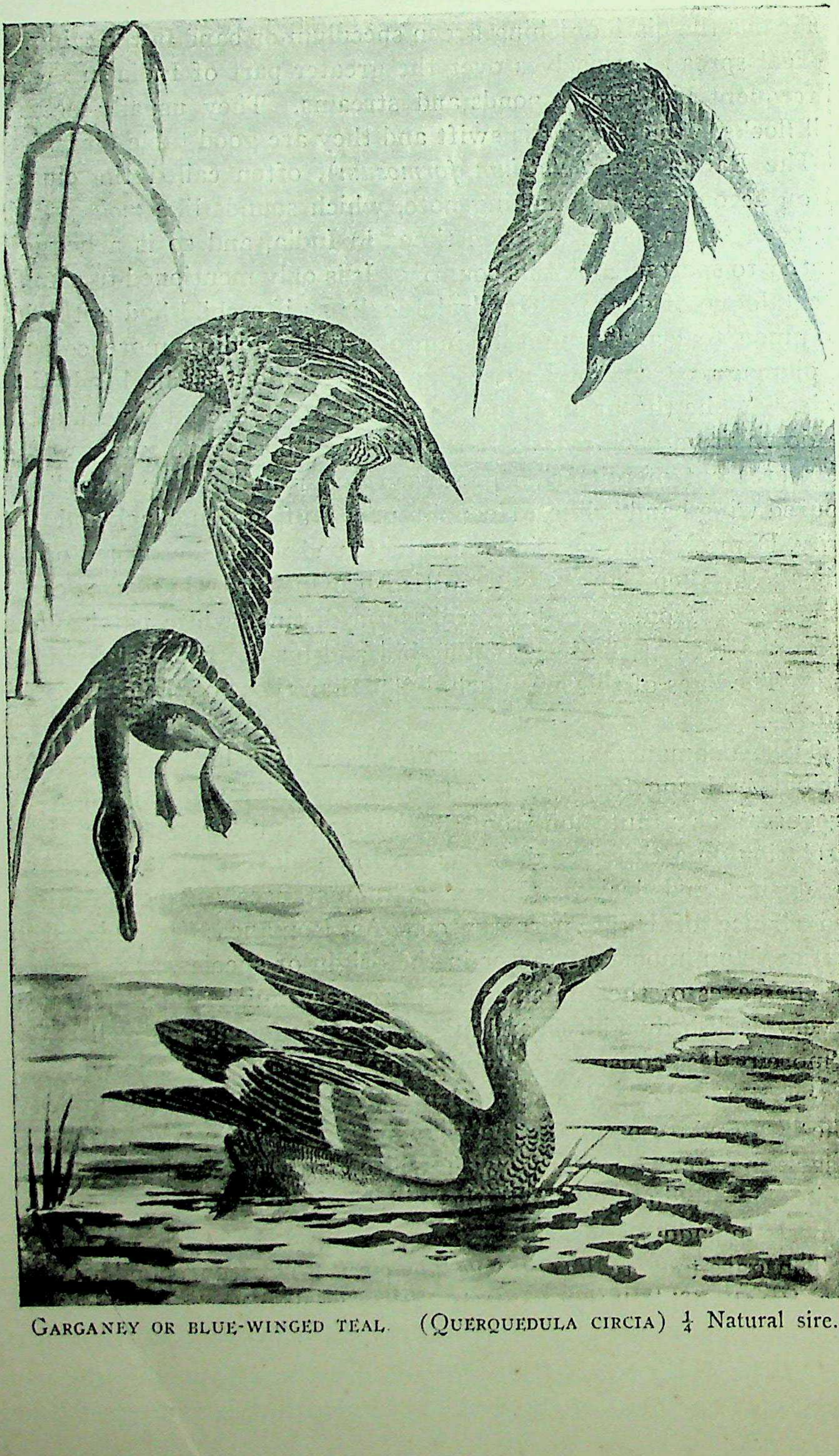
Teal spread themselves over the greater part of India in winter and frequent rush-grown ponds and streams. They usually occur in small flocks. Their flight is swift and they are good table birds.

The Baikal teal (*Nettium formosum*), often called the clucking teal on account of its clucking note, which sounds like *mok-mok*, has only been taken about a dozen times in India, and so is a negligible quantity to sportsmen in this country. It is only mentioned to complete the catalogue of ducks. The drake looks as if a child had got hold of a common teal and sought to improve it by adding more colour to the plumage. I cannot better Finn's description of the head of this species: "The throat and crown are black, the face buff, with a black line down from each eye as if the bird had been crying tears of ink, and a crescent of glittering green curving round at the back." The coloured wing band is like a Neapolitan ice, buff, green, black and white. Verily, Dame Nature was in a sportive mood when she turned out this drake. The hen is a dull mottled-brown bird, but she can be distinguished from other lady teals by a distinct white patch on each side of the face at the base of the bill and by the four-coloured wing band. The hues of this are much duller than those of the drake's wing band.

The Andaman teal (*Nettium albigulare*) is a bird of very limited distribution, being found only in the South Andaman Islands. It may be regarded as a mutation from the Australasian oceanic teal. Living in isolation on a tiny island, it has, so to speak, been left to follow its own devices and desires. In such circumstances a "sport" enjoys a good chance of being perpetuated. As Romanes has pointed out, isolation is an important factor in the origin of species.

The sexes of the Andaman teal are very much alike. These teal are very dark-brown birds, and might pass for female gadwalls but for the more or less conspicuous white ring round the eye, the white chin and throat and the lead-coloured legs. Another distinguishing feature is the large white patch on the wing in front of the wing bar, which is black, narrowly bordered with white, with a narrow green band running longitudinally through the middle of the black. The Andaman teal nests in paddy-fields.

The garganey teal (*Querquedula circia*) is often called the blue-winged teal. This latter name is rather misleading, the wing bar or speculum being faded green. However, the inner or upper part of the wing of the drake is a delicate French grey, and from this the name is derived. The head of the drake is of chestnut, sometimes nutmeg,



Garganey or blue-winged teal. (Querquedula circia) ¼ Natural sire.

hue. There is a broad white eyebrow, which is very noticeable and runs from the forehead to the neck. The nutmeg brown of the breast is sharply marked off from the pencilled grey of the abdomen. The bill and legs are dark greenish grey. The hen has nothing very striking about her plumage. She lacks the French grey on the wing and also the green speculum. She is dark brown above and whitish below. Like the drake, she has an eyebrow, but this, being less white, is not nearly so conspicuous. In short, she is not unlike the duck of the common teal. She, however, lacks the bright green on the wing. By this feature she may be readily distinguished.

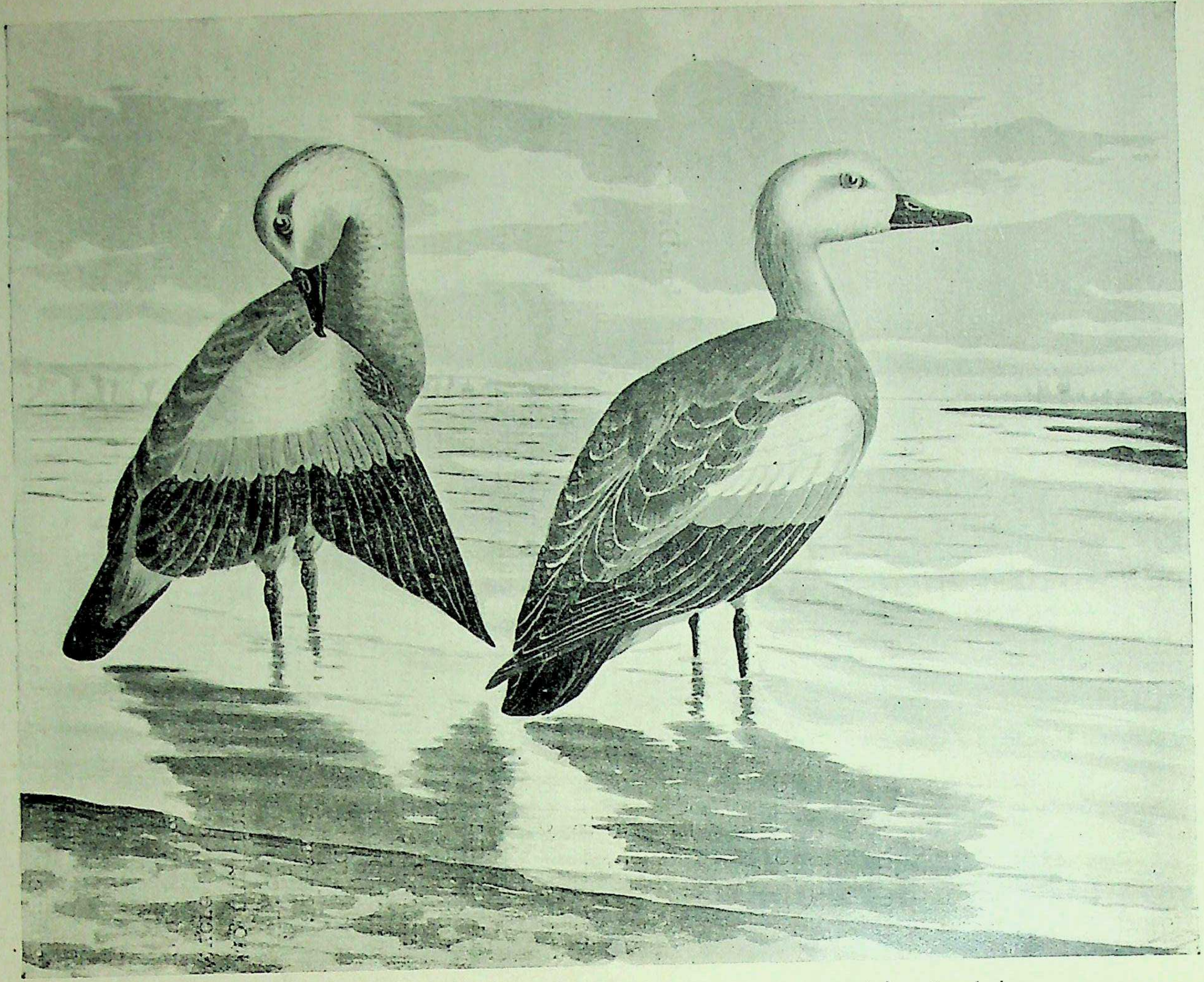
The garganey teal is one of the earliest ducks to arrive in India in the autumn; it does not have to go so far to breed as most migratory ducks do. It is common in Bengal and fairly abundant in the United Provinces. It occurs in large flocks, and the noise made by the wings of a flock flying in very close formation is peculiar. Mr. Stuart Baker describes it as "pattering swish." The garganey is a very fair bird for the table.

IV.—Migratory Ducks: The Larger Non-Divers.

Of the eight large ducks four have already been described, being resident birds: these are the white-winged wood duck, the comb duck, the spotted-bill and the pink-headed duck.

The brahminy duck or ruddy sheldrake (*Casarca rutila*) is a very handsome bird and, were it as good to eat as it is to look upon, it would be held in high esteem by sportsmen. Unfortunately, it is an execrable table bird, being only fit for soup. It has been the cause of much profanity on the part of sportsmen, for, as Finn neatly puts it, the bird is a showy spoil-sport. It is one of the most wary of the quack-quack tribe and is usually the first of a crowd to "spot" the gunner. As it is not shot by any self-respecting sportsman, there is no need for this extreme wariness. Nevertheless, it behaves as if it were the one bird the shikari is out to shoot, and while it is yet well out of range it gets up, uttering its call, which causes all the other duck in the immediate vicinity to follow suit.

The call of the brahminy duck, or *chakwa* as it is often named, is easy to recognise, but difficult to describe. It is a rather musical gurgle. Finn writes of the "trumpet tones which have something very stirring and picturesque about them." Pallas describes the call as clarionet-like. Jerdon says it is peculiar and goose-like, sounding something like *a-oung*. This is quite a good description because the only call with which it is possible to confound that of the ruddy sheldrake is that of a goose. Stuart Baker syllabises the call as *a onk*.



BRAHMINY DUCKS, OR RUDDY SHELDRAKES. (CASARCA RUTILA) $\frac{1}{6}$ natural size.

The "a" is long and gurgling and pronounced "ah." The Mongols call the bird *Aangir* onomatopoetically. The Indians say, one bird calls *Chakwa, main aon*, and the answer from the other is *Nahin, chakwi!* "Chakwa, may I come? No, chakwi!" The *main aon* and *nahin*, pronounced nasally as Indians do, are a good representation of the call, and "chakwa" may be taken to represent the gurgle with which it often begins.

The brahminy duck is very easy to identify, even when on the wing, on account of its ruddy hue. The bulk of the plumage is reddish yellow. The head and neck are buff or pale yellow; sometimes the yellow on the top of the head of the female is so pale that it might almost be described as white. In the early part of the cold weather the drake has a narrow black ring round the lower neck. The wings are white, black and bronze-green. The tail feathers are black, as are the feet and bill. During flight the "chakwa" is unmistakable—a showy tri-coloured bird, the body reddish yellow and the wings white with broad black edges.

This species resembles the geese rather than the ducks in its habits; indeed the scientific name *casarca* is said to be the South Russian name for a goose. Although often found on *jhils* in company with other ducks, brahminies prefer rivers. They spend most of their time on land, feeding on grass, young crops, shellfish and insects. They usually occur in pairs, but sometimes collect in flocks of twenty or thirty. They are fond of feeding on the drying foreshore of the Ganges when the river is falling. Brahminies, when thus engaged, look from a distance like poultry. They walk about much as fowls do, picking up things from the ground. Sometimes they run with necks stretched out and bills just above the sand as though skimming it. Brahminy ducks, like brain-fever birds, seem never to sleep. My bungalow is situated on the banks of the Ganges, and when I awake in the cold-weather nights I hear their calls as often as not.

Brahminy ducks do not breed in the plains of India. I was once called to task by a P. W. D. engineer for saying this: he declared that they nested in the Central Provinces. When I challenged him for proof, all he could say was that he had been told so by his *chaprassi!*

A few brahminy ducks do, however, breed within Indian limits, in holes in cliffs of the Himalayas at altitudes over 10,000 feet. The greater number of the birds that winter in India go farther afield to breed. Henderson came upon young chakwas, scarcely able to fly, in July, at elevations of 16,000 feet in Yarkand. "When approached," he writes, "the mother made them all dive, swimming and flapping on to each of them as soon as it showed itself above the water. The mother also pretended to be wounded and lay on the water every now and then with wings spread out as if unable to fly."

This injury-feigning instinct is found in many species of birds and serves the useful purpose of diverting the attention of an intruder from the young birds. For reasons which I have set forth at length elsewhere, I do not believe that the parent deliberately feigns injury. The action is merely an expression of violent emotion. A human being, when in a rage, sometimes throws himself on the ground, and kicks violently. This action is analogous to that of a bird which acts as though it were injured when greatly alarmed.

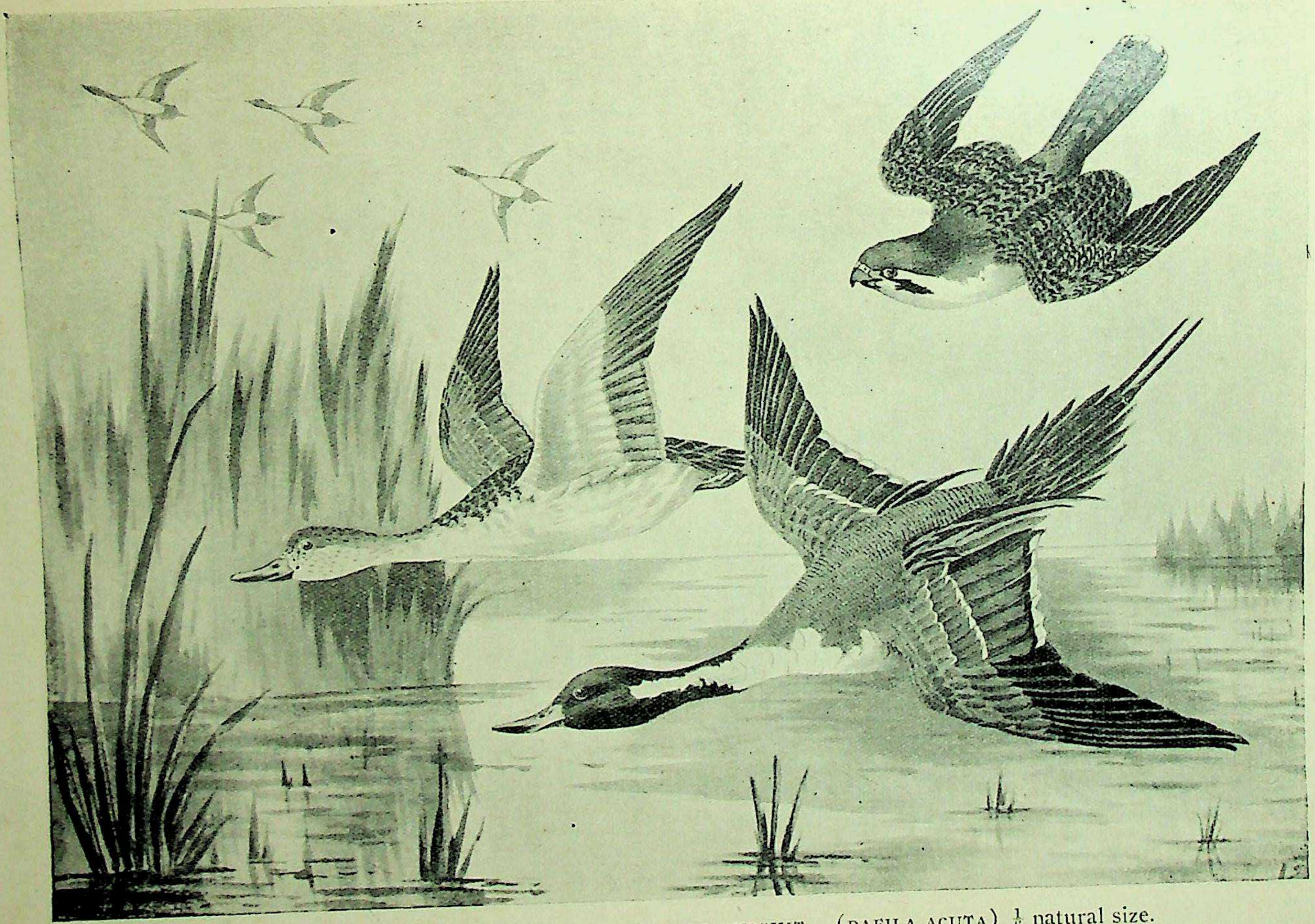
The only place in India where the sheldrake (*Tadorna cornuta*) is likely to be seen is Sind. This showy duck prefers salt to fresh water, and is fairly common on the coast of England. Being so conspicuously coloured, it is easy to identify. The bill and feet are bright red; the prevailing hue of the plumage is white. The head and neck are black with a green gloss. The most striking feature of the bird is a broad chestnut band round the upper back and breast, interrupted in front by a dark-brown band that runs longitudinally from the breast, along the abdomen to the tail. The wings are black and white with two broad bands, one green and the other chestnut. The sheldrake nests in rabbit burrows and other holes. There is, in the Natural History Muesum at South Kensington, part of a sandcliff so opened as to show a nest of this species. The sheldrake is quite useless for the table.

The pintail (*Dafila acuta*) shares with the mallard the honour of being the most handsome of the Indian ducks. The beauty of the mallard drake lies chiefly in the colouring of his plumage, while that of the pintail is mainly in shape.

The pintail stands in much the same relation to the other ducks as a yacht does to a cargo-vessel. Says Finn : " The elegant clipper-built pintail is at once conspicuous by his racing lines among all our ducks." His long neck and sharp tail serve to differentiate him from all the other duck, whether he be flying or swimming. In England this bird is frequently taken in decoys, and is sold by the name of the sea-pheasant.

The pintail derives his popular name from the long-pointed middle tail feathers. These are 8½ inches long when he is in full dress, that is to say from October to June. When he wears these, his length is 29 inches ; at other times, it is about 25 inches. The female has also pointed middle tail feathers, but these are not nearly so long as those of the drake.

The head of the latter is brown with a lilac gloss. There is a white band, narrow at the beginning and broadening until it merges into the white breast and abdomen, beginning a little way behind the eye and running down the side of the neck. The lower neck, shoulders, back, upper wing feathers and the sides of the body have a



PINTAIL DUCKS, WITH PEREGRINE FALCON IN PURSUIT. (DAFILA ACUTA) $\frac{1}{6}$ natural size.

grey background with numerous fine wavy black pencillings on it. From the shoulders and back grow a few lanceolate feathers that look as though they were made of black velvet bordered with light brown. Most of the tail feathers are black. There is a yellow buff patch on the flank just in front of the tail. The greyish brown wings are ornamented by four bars. First there is a narrow band of cinnamon colour, followed by a broad bronze-green band; next to this is a narrow black band, and, finally, a narrow white one.

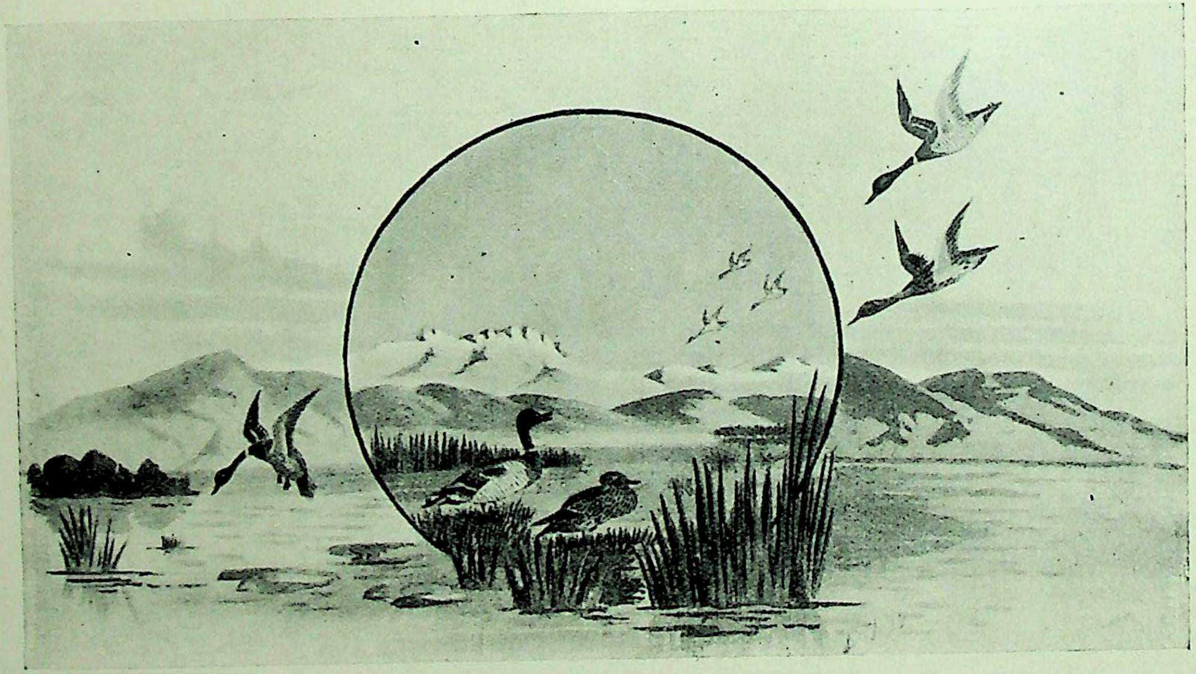
The hen is not nearly so handsome. Her lower parts are white. The upper plumage is greyish brown on which are painted buff crescent-shaped markings, the outer curve of each crescent pointing backwards. She has no coloured wing bar, but usually two white ones. In both sexes the bill is black along the middle and grey at the sides. The feet are dark-grey.

The distribution of the pintail may be said to be the whole of the Northern Hemisphere. It breeds very far north, but during the winter spreads itself over half the world.

It arrives in India early in November and leaves in March. The pintail is, perhaps, the best of the duck for the table. I do not remember having eaten one that tasted fishy. Pintails go about in large flocks. These are sometimes composed of male birds only. They swim with the neck arched and the tail well raised. The swish of the wings of a flock when flying is peculiar. Hume described it as " low, soft, hissing." Many experienced sportsmen are able to identify duck by the wing rustle, or sound made by the rapidly vibrating pinions of a large flight. Pintails resort to big *jhils*, particularly those in which rushes do not grow very densely. The food of pintails consists of shellfish, insects, paddy and other aquatic plants. Much of this is procured at night-time.

The mallard (*Anas boscas*), or wild duck as it is commonly called in England, is the species from which all the varieties of domestic duck have arisen. The drake when in full dress, that is to say from October to June, is a very handsome fellow. His head and neck are a beautiful velvety green; this is divided off from the chocolate breast by a white collar. The wing is set off by a broad bar or speculum of metallic blue with white margins. The tail is black; some of the upper feathers have a forward curl. The remainder of the plumage is grey, finely pencilled all over with brown. The feet are red and the bill greenish grey. The drake in his undress plumage resembles the hen. Her wing bar is like that of the drake. Her plumage is sober brown, each feather being more or less broadly edged with buff. Her bill is orange-red with a black nail and some black on the upper part.

In winter this species is abundant in Sind and the western parts of the Punjab; it becomes less common farther east and south. It occurs



MALLARD. (ANAS BOSCAS) $\frac{1}{24}$ natural size.

in flocks of varying size and frequents *jhils*, large and small, rivers, brooks, marshes and even the sea coast. It feeds chiefly on vegetable food, but, like the pintail, eats all manner of animal matter. It is a good table bird, being in this respect second only to the pintail. It breeds all over northern Europe and in Asia as far south as Kashmir.

It usually builds on the ground near water, scraping together any vegetation in the vicinity. The nest is lined with down, which the female plucks from her breast. From eight to eighteen bluish white eggs are laid. Major Cock, writing of Kashmir, says that the mallard breeds in large numbers at the Anchar Dall and other lakes. The nest is usually placed under an overhanging tuft of grass or rush. The female allows an intruder to come quite close before she leaves the nest and will sometimes allow herself to be captured by hand on the nest if the eggs are near hatching.

All the ducks of India have now been described. A brief summary of the information already given is set forth below in the form of a key which should enable anyone to identify in a few minutes any duck held in the hand.

The method of using this key is that of elimination. Look at the feet of the duck to be identified, and ascertain whether they are as described in Class I, or Class II, below. If the feet be those of a diver, the duck cannot be any of those in Class II and thus 18 species are at once ruled out. If it is a non-diver, then all Class I species are ruled out, and it should then be noticed whether the bird has on the body any bright colour apart from the wing bar; if it has, then it cannot be any of the duck in Class II (2). By using the key it is possible to eliminate every species except that to which the specimen belongs.

Key to the Indian Ducks.

CLASS I, DIVERS.—

Well-developed lobe to hind toe; outer toe as long as, or longer than, the middle toe.

CLASS II, NON-DIVERS.—

Lobe to hind toe wanting or small; outer toe shorter than middle one.

(1) Bright colouring in body plumage, apart from any colour in the wing.

(2) No bright colouring except perhaps as a wing bar.

- (*a*) Plumage black and white.
- (*b*) Plumage brown or grey, often pencilled and mottled. No wing band.

(*c*) Plumage mainly brown or grey. Coloured wing band or speculum.

(*d*) Plumage brownish or grey, with no coloured wing band, but with *two* white bars in wing.

(*e*) Plumage brownish, with no coloured band, but *one* white wing bar.

BRIEF DESCRIPTION OF THE BIRDS IN EACH CLASS.

[Rare species are printed in italics. The numbers in brackets against each species denote the length from tip of the bill to tip of the tail in inches.]

CLASS I, DIVERS.—

RED-CRESTED POCHARD (21). Drake—bill crimson. Legs red with dark webs. Duck—bill black with red or orange tip. Legs orange yellow. Eyes brown.

Golden-eye (18). Legs orange yellow. Eyes golden yellow.

Stiff-tail. Tail feathers stiff and wiry, like those of woodpecker.

POCHARD (18½). Legs dark slaty grey. Eyes red. No white wing bar.

TUFTED POCHARD (17). Legs dark slaty grey. Head crested. Eyes yellow. White wing bar.

WHITE-EYED POCHARD (16). Legs dark slaty grey. Eyes white in drake, grey in duck. White wing bar. No green gloss on head.

Eastern White-eyed Pochard (18). As above, except for the green gloss on the head.

Scaup (18). Legs light lead colour. Eye yellow. White wing bar. Head not crested.

CLASS II, NON-DIVERS.—

(1) Brightly-coloured species.

BRAHMINY DUCK (26). Both sexes. Foxy red plumage. Wings black and white, with green band.

MALLARD (24). Drake only. Head glossy green. White collar. Blue and white wing bar. Legs red.

COMMON TEAL (15). Drake only. Head chestnut with broad green band behind eye. Brilliant green band on wing.

Baikal or Clucking Teal (15½). Drake only. Top of head brown. Green band behind eye. Throat and stripe running downward from eye black.

SHOVELLER (20). Drake only. Head glossy green. Breast white. Bill much broader at end than at base.

Sheldrake (26). Both sexes. Bright red bill. A pied bird with a chestnut band running round back and breast.

Pink-headed Duck (23½). Head pink, light in drake, dull in duck. Rest of plumage dark.

Crested or Falcated Teal (20). Drake only. Crested head. Sickle-like feathers projecting from wing.

White-winged Wood Duck (32). Both sexes. Head speckled black and white. Lower parts reddish brown. This is the largest duck.

(2) Duck having no bright colour in plumage except sometimes a bright wing band.

(*a*) Plumage black and white.

COMB DUCK (30). Both sexes. Head speckled black and white. Male has large black protuberance on bill.

COTTON TEAL (13). Drake only. This is the smallest duck.

(*b*) Plumage brown or grey. No wing band.

WHISTLING TEAL (17). Both sexes. Wings rounded. Dull reddish brown plumage. No white in plumage. Chestnut patch on wing. *Maroon patch above tail.* Whistling note.

LARGER WHISTLING TEAL (20). Both sexes. As whistling teal, except *large cream patch above tail.*

COTTON TEAL (13). Female only. White underparts. Smallest duck.

SHOVELLER (20). Female only. Bill broader at tip than at base.

WIGEON (19). Female only. Bill short and narrow, coloured French grey with dark tip. Underparts light.

Marbled Teal (18½). Both sexes. Faded, washed-out brown upper plumage. Bill and feet dark slate colour.

(*c*) Plumage mainly brown or grey. Coloured wing band or speculum.

MALLARD (24). Female only. Red bill with black tip. Red legs. Wing band metallic purple blue.

SPOTTED-BILLED DUCK (24). Both sexes. Yellow tip to bill, two red spots on bill at base. Legs red. Wing band metallic green.

WIGEON (19). Drake only. Bill short and narrow, coloured French grey with dark tip. Head dark chestnut with golden patch on forehead. Wing band black, white and green. (Hen sometimes has wing bar. See above.)

COMMON TEAL (15). Female only. Wing band emerald green with buff edge.

PINTAIL (26). Drake only. White band running down side of head and neck. Tail long, tapering to a point. Wing bar buff, green, black and white.

Andaman Teal (17). Both sexes. Usually white ring round eye. Narrow green wing band with broad black edges running *along length of wing.* White patch in front of these.

Baikal or Clucking Teal (15½). Female only. White patch on each side of head in front just behind bill. Running across wing, narrow green bar bordered with black, outside this white bands.

Crested or Falcated Teal (20). Female only. Wing band black, glossed with green.

GARGANEY TEAL (16). Drake only. White eyebrow. Dark breast. Upper part of wing blue-grey with emerald band bordered on either side with white. (Sometimes the female has a dull green wing bar. See below.)

GADWALL (20). Drake only. Chestnut patch or bar on the wing, followed by a black and white bar. Legs and feet dirty reddish orange.

(*d*) Plumage brownish or grey with no coloured band but with two white wing bars.

PINTAIL (24). Female only. Brown above, whitish below. Easily recognised by pointed tail.

Baikal or Clucking Teal. Female only. (See above.)

(*e*) Plumage brownish with no coloured band, but one white wing bar.

GADWALL (20). Female only. Above the white wing bar is a small black patch and above this there is sometimes a chestnut patch. Legs and feet dirty orange red.

V.—Swans, Geese, and Pseudo-Ducks.

Swans are not entitled to be numbered among the common birds of India. Three species, however, occasionally make their appearance and must, therefore, be mentioned.

These are the mute swan (*Cygnus olor*), the whooper (*C. musicus*) and Bewick's swan (*C. bewicki*). All these are large white birds. The black swan does not come into India except when imported by dealers. The mute swan is the swan of "the stately homes of England," the swan of the Thames and the ornamental waters in English parks. This is easily distinguished from the other two by the patch of black skin between the eye and the bill, and the black knob that grows on top of the bill from just above the base. The mute swan has, I believe, been seen in the wild state only in the North-West Frontier Province and in Sind.

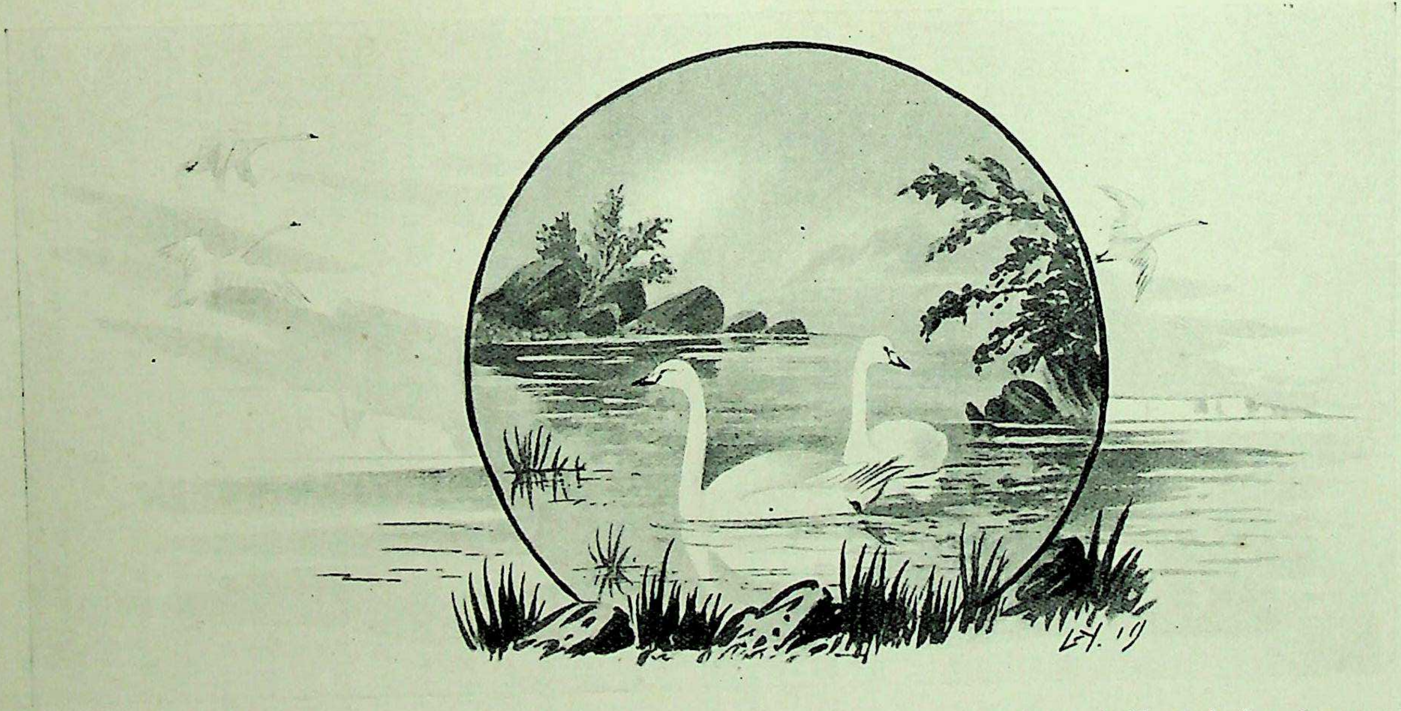
It is a confiding bird; if one of a small flock be shot, as likely as not the remainder will fly round and round the gunner offering an easy target, with the result that he cannot resist the temptation! Young swans are good to eat, and in the Middle Ages were accounted a royal dish. The old birds are likely to prove tough.

The whooper is a very rare visitor to India. It has, however, been shot in Nepal and in the Punjab. It is readily distinguishable from the mute swan by the absence of the black knob above the bill, and the black patch between the eye and the bill.

It is only of late years that Bewick's swan appears to have visited India. The first one recorded is that shot by Mr. McCulloch at Jacobabad in 1908. It has been seen on several occasions in India since then. It is not very easy to distinguish this swan from the whooper. Bewick's bird has far more black on the bill, the yellow being confined to a patch at the base. In the whooper the yellow on the bill predominates, the black rarely extending beyond the front half of the bill. Bewick's swan is smaller than the whooper. Should a sportsman be fortunate enough to shoot a wild swan in India, and if he be in any doubt as to its species, I recommend him to cut off the head and send it to the Bombay Natural History Society for identification.

Unless the bird shot be one of a flock, the chances are that it is a captive bird that has made good its escape. Calcutta dealers import swans from England.

Two species of geese visit India in large numbers every year; these are the grey-lag and the barred-headed species. The white-fronted and the dwarf goose are undoubtedly very occasional visitors to this country, and there is some evidence that the pink-footed, the bean and the red-breasted goose have been seen in India. For all practical purposes only two species of geese visit Hindustan.



SWANS.—CYGNUS MUSICUS about $\frac{1}{30}$ Natural size. (SWIMMING) AND CYGNUS OLOR about $\frac{1}{30}$ Natural size. (FLYING)

The distinguishing features of geese are the webbed feet, the small head, and the peculiar-shaped bill, relatively shorter and narrower than that of a duck, very high at the base, tapering rapidly to the tip where there is a well-marked "nail." The bill, like that of the duck, has "teeth," and is well adapted to cropping grass and green crops, on which geese chiefly feed.

Although their feet are webbed and they can swim well, geese spend nearly the whole of their time on land. Their flight is strong; when they are going any distance they fly in a V-shaped formation, the bird forming the point of the V being always ahead, but it is continually replaced by another. One limb of the V is usually longer than the other. When flying, geese utter continually a peculiar "clanging" call, difficult to describe but easy to recognise. So distinctive is it that it betrays the whereabouts of a flock to a man who cannot see it. A common and pleasing spectacle in Northern India during the winter months is a V-shaped flock of geese flying some two hundred feet above the level of the earth. The vibrating wings of the birds cause the moving V to quaver along its whole length.

Geese, like duck, except when about to alight, never sail on outstretched wings. Hence a flock of large birds (even though it have a V formation), of which some of the members periodically cease beating their wings, cannot be a flight of geese. All the above remarks apply equally to the grey and the barred-headed goose.

The grey-lag goose, or, as Finn prefers to call it, the grey goose (*Anser ferus*), is the species from which the domestic goose is derived. The appearance of the grey variety of the domestic bird differs but little from that of the wild one. The grey goose is nearly a yard in length and weighs about 8 lb.

The sexes are alike in appearance. Greyish brown is the prevailing hue of the plumage. Most of the feathers have pale edges and these show as crescentic markings in the plumage. The rump and hind part of the abdomen are white. The inner half of the wing lining is pale French grey. This during flight looks white and shows up distinctly from the darker tips of the wings, thereby may this goose be distinguished from other large grey birds during flight. The bill, legs and feet are pink. The hue varies considerably in intensity; in some birds the bill is flesh-coloured, in others purple. In Europe some grey-lag geese have the bill yellow. As this seems never to be the case with birds seen in India, some ornithologists have tried to make a separate species out of the Indian birds under the name *Anser rubirostris.*

Writing of the distribution of the grey goose, Blanford says: "This goose breeds in Europe north of about 50° lat., and in Central Asia and Southern Siberia, and migrates in winter to Southern Europe, North

Provincial Museum LUCKNOW.

Africa, South-Western Asia, and Northern India. Within our area it is common from the end of October to the beginning of March in the Punjab, Sind and the United Provinces; it occurs, though rather less abundantly, throughout Bengal, Assam and Manipur, and it is common in the Irrawaddy valley north of Myingyan. It is met with as far south as the Nerbudda on the west, and the Chilka Lake in Orissa on the east; but is seldom found south of the Gangetic plain inland."

Grey geese usually occur in flocks, some of which are very large, being composed of over one thousand individuals. As has been already remarked, they feed chiefly on grass and young crops. They are largely nocturnal in their habits and spend most of the day asleep on a *chur* in a river or the bank of a *jhil.* They are very wary birds, invariably posting sentinels when sleeping. It is almost impossible for a man with a gun to get near wild geese unless he resort to guile. One method is to crawl up to them through tall crops in the early morning or late evening when they are feeding; but it is not easy for the average man, when encumbered by a gun, to crawl through a crop without making sufficient noise to cause the feeding geese to take to their wings before they present an easy target. Thus most sportsmen make no bones about shooting geese sitting. Another method of circumventing the innocent goose is to mark a place over which the birds fly low when on their way to or from their feeding grounds; the sportsman then conceals himself at a convenient spot among the crops beforehand and shoots at the geese as they fly overhead. Another plan is for the gunner to conceal himself in a boat and let this drift down stream past the sandbank on which geese are indulging in a siesta, but in such cases the sentinels posted by the geese will probably get nervous and give the alarm while the flock is still out of range. Doubtless, sportsmen of the future will consider it grand sport to chase geese in aeroplanes and fire when they get within range; but until these days come we have to resort to modifications of trench warfare.

For all their wariness, geese are lacking in brain power. Some years ago, when spending the Christmas holidays on the Ganges, I noticed that a flock of about twenty geese used to sleep on a sandbank near the high bank of the river. I determined one morning to crawl up to the top of the cliff from the land side until I could see the geese and then fire. By this means I shot a goose.

I was somewhat surprised when I saw the remainder of the flock sleeping at the same place on the following morning. I repeated the manœuvre of the previous day and bagged another goose. On the third day the same thing happened. I then had to leave the camp, and in consequence could not find out how long it would take the geese to learn wisdom and choose a less dangerous spot at which to sleep.

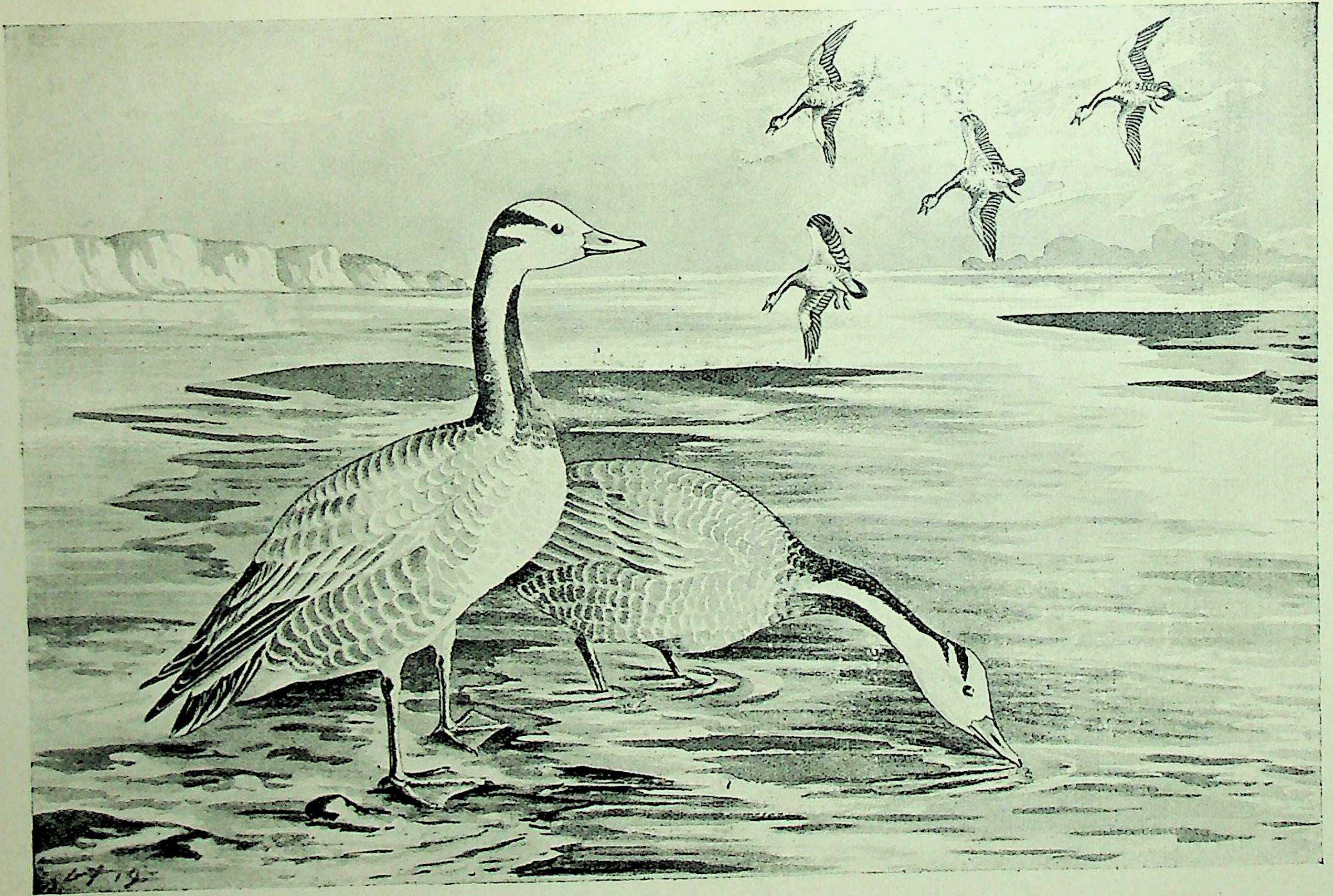
Although the grey-lag goose has been domesticated for over two thousand years, there are practically no varieties except the white one. When we contrast this state of affairs with that prevailing among fowls and pigeons, we have an excellent illustration of the difference between quiescent and mutating species. On the view that all species vary indiscriminately in every direction, which is, or was till very recently, the orthodox one, there is no answer to the question "Why have not we bred crested geese, blue geese, yellow geese, etc.?" According to the mutation theory of De Vries, which is rapidly gaining adherents, species pass through periods of quiescence and activity. During the former they are in a stable condition. In the period of activity the species is continually throwing off "sports" or elementary species which Nature, or the breeder in the case of domestic animals, seizes upon and fixes. Geese are obviously in a quiescent condition, and this explains why there are so few domestic varieties; poultry and pigeons, on the other hand, are passing through a period of activity, and therefore the breeder is able to produce many varieties which breed true.

Before leaving the grey-lag goose, something must be said about its popular name, which printers will persist in rendering "grey-leg."

The name "lag" is believed to have been given to this species in England because it used to stay or lag behind in Britain to breed, while the other species of goose went north.

The barred-headed goose (*Anser indicus*) is really more of a grey bird than the grey-lag species. As Finn well puts the matter, its most striking peculiarity is the pure light grey colour of the plumage, more like that seen on gulls than the grey-brown of geese in general. The head of a bird of this species, which is more than a year old, is very characteristic, being white with two black bars—one round the back of the head running from eye to eye, and the other a little lower down on the nape. The neck is dark brown with a longitudinal white band on each side. The black bars are not seen on birds less than a year old. These can be distinguished by the light grey of the body plumage. The bill is yellow with a black tip, the feet are orange.

The barred-headed goose is smaller than the grey-lag, weighing about 6 lbs. It visits India in vast numbers, and is far more abundant than the grey-lag. Hume declared that on one occasion he saw as many as ten thousand of these geese on a ten-mile reach of the Jumna. Its distribution in India is a little wider than that of the grey-lag. The habits of the two geese are practically the same, with this difference, however, that the barred-headed species is more often seen resting on the water. The note is harder and sharper, and some people assert that they can tell by the call whether a flock flying overhead at night is composed of these or grey-lag geese.



BARRED-HEADED GEESE ON THE SANDS. About $\frac{1}{7}$ Natural size.

As the barred-headed goose does not breed in India, the name *Anser indicus* is not a very happy one.

At the end of March or the beginning of April the barred-headed geese wing their way over the Himalaya to the lakes of Thibet, where they nest.

I have no intention of giving a detailed description of the five rare species of Indian geese. Those who want this kind of pabulum are referred to solid books on ornithology. It will suffice for our purpose if sufficient is said of each to enable the sportsman who is so fortunate as to shoot one to identify it.

The white-fronted goose (*Anser albifrons*) is a smaller edition of the grey-lag, being about two feet long and weighing some 5½ lbs.

In the adult bird there is a conspicuous white band behind the bill, running from one side to the other over the forehead. The bill, when the bird is alive, is pale pink; but soon turns yellow after death.

The dwarf goose (*Anser erythropus*) is the size of an average duck, being one and twenty inches long. It has a white band behind the bill like that of the white-fronted species, but the plumage is much darker. The most distinctive feature is the patch of yellow skin round the eye. The goose-like bill should prevent anyone from mistaking the bird for a duck.

As the name suggests, the feet of the pink-footed goose (*Anser brachyrhynchus*) are pink, but then so are those of the grey-lag. The feature whereby this species may be distinguished from the other Indian geese is the bill, which is black, except for a bright pink or carmine patch in the middle.

In the bean goose (*Anser fabalis*) the bill is orange-yellow with a black nib at the tip. Its dark plumage distinguishes it from the young barred-headed goose.

The red-breasted goose (*Branta ruficollis*) is another very small goose, but the shape of the bill prevents its being confounded with a duck. The plumage is mainly black and white, but the breast is nearly as red as that of a robin. There is also a red patch on the cheek.

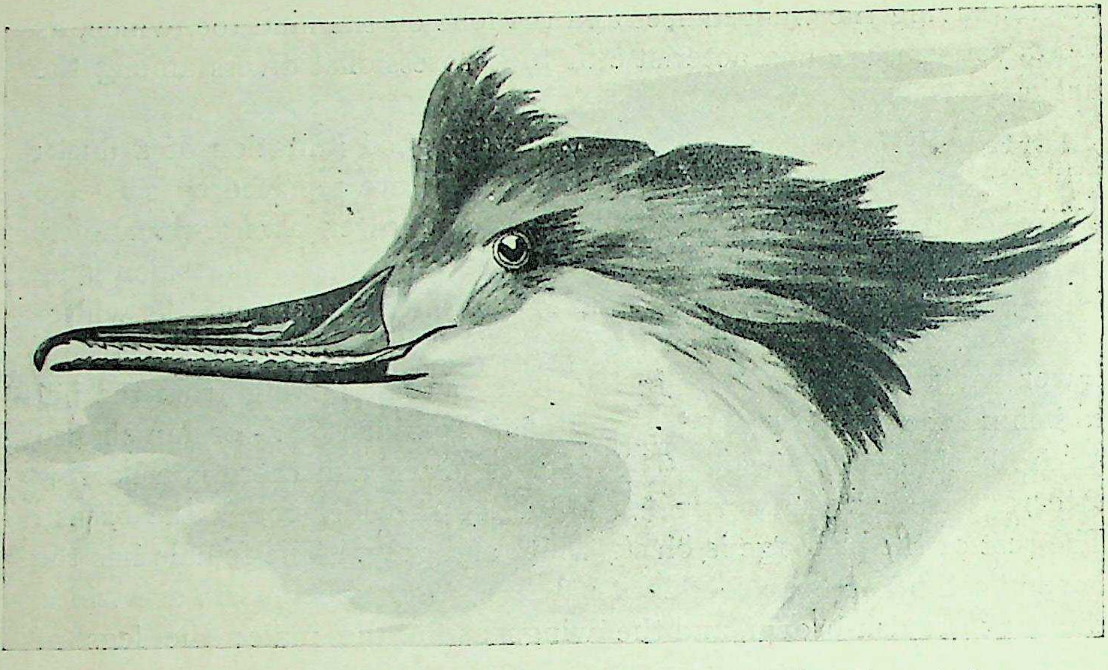
We now come to those fowls which I have designated pseudo-ducks. They have puzzled ornithologists, being very like ducks but "not quite the thing." Even as Eha says of the sparrow, it aspires to being a gentleman but only succeeds in being a gent, so may it be said that the three birds with which we are dealing aspire to be ducks but only succeed in being pseudo-ducks. If they were to seek election to the duck club, I have no doubt that every self-respecting duck would blackball them on the ground that their bills are not flat enough for a duck's bill and that the lamellæ are replaced by imitations in the shape of tooth-like serrations along the edges of the bill. These three poor relations of the ducks are often called mergansers. They are excellent divers, having the webbed feet and the lobe on the hind toe, which, as we have seen, are characteristic of the professional divers among the ducks.

The smew (*Mergus albellus*) is a very good imitation of a duck: but for the fact that the lamellæ of the bill are replaced by saw-like serrations at the edges of both the upper and lower jaws or mandibles, the bird would easily pass for one, and doubtless many sportsmen have mistaken it for a kind of pochard. It is a little bigger than the white-eye. The male smew is very easy to identify. The head, neck and lower parts are white. There is a black patch running from the bill to behind the eye on each side, and another which is V- or fan-shaped at the back of the head. The back is black and there is a narrow interrupted black collar running from the shoulder round the breast. The rest of the plumage is black, white and grey. The female has the head chestnut without the black patches. Her under-parts are white, the back greyish-brown, and the wings as in the male; the legs of both sexes are lavender grey.

The smew feeds chiefly on fish and water-insects, and is a kind of C. B. Fry among water birds, being a super-athlete both in water and air. It visits India in small numbers and most men who do much shooting in India must have bagged one or two specimens.

The goosander (*Merganser castor*) would never pass for a duck on account of the long narrow toothed bill. The upper mandible is longer than the lower one and is hooked at the end. The head is shaped like that of a cormorant, the body is long and flat instead of being "tubby" like that of a true duck. The legs and webbed feet are vermilion and there is much red in the bill, most of which soon changes to black after death. The head and neck of the male are black with a green gloss. Black, white and grey are the prevailing hues of the plumage. I will spare the reader details; he will find all he wants, and possibly a good deal more, in the bird volumes of the *Fauna of British India* series. The hen has the head chestnut-brown, with a white throat and chin. In both sexes there is a mane-like crest, better developed in the female than in the male. Apart from the head, the hen is a white and grey bird. The goosander is a fairly common visitor to India in winter, and may be seen as far south as the Godaveri. It feeds on fish which it catches after the manner of cormorants. Goosanders go about in small flocks.

The red-breasted merganser (*Merganser serrator*) is so rare a visitor to India that it may be ignored by the sportsman. The bill of this bird is longer and narrower than that of the goosander. The drakes of the two species may be distinguished at a glance by the red breast streaked with black, which in the merganser is wedged in between the white neck and white abdomen. The hen is like the hen



HEAD OF GOOSANDER FEMALE (MERGANSER CASTOR). Natural size.

goosander, but her back is brown instead of grey and the white of her chin is streaked with red.

The habits of the merganser resemble those of the goosander.

SNIPE.

We have considered the ducks and their relatives. I now propose to deal with the snipe. Snipe belong to the large family of birds called the Charadriidae, which contains the sandpipers, plovers and snipe. Now, the snipe are the only members of this family that are shot for sport. Perhaps I might say they are the only game birds of this family, using the words in their wide sense to denote all birds that are usually shot for sport and not in the more restricted sense in which the word "game" is used in England to denote only the animals enumerated in the game laws.

It may be asked, why do sportsmen shoot snipe and not sandpipers or lapwings?

The answer is that, according to British ideas, a bird is not a game bird unless it fulfils two conditions. It must be good to eat and difficult to shoot. Given these qualifications, the larger the bird the better. What makes a bird difficult to shoot is not so much the rapidity of its flight as its wariness or its skill in concealing itself. Duck are wary, and, as they are good for the table in some form or other, they comply with these conditions.

As regards sandpipers and snipe, the former habitually expose themselves to view, they feed in the open in broad day-light and allow a man with a gun to come quite near before they fly away; for this reason sandpipers, or snippets as Englishmen in India often call them, are not shot. Snipe are not only wary; they habitually seek cover in the daytime. In order to be seen they have to be flushed, and the fact that the sportsman usually has no idea where they are until they rise from cover makes them difficult to shoot, and hence good sporting birds.

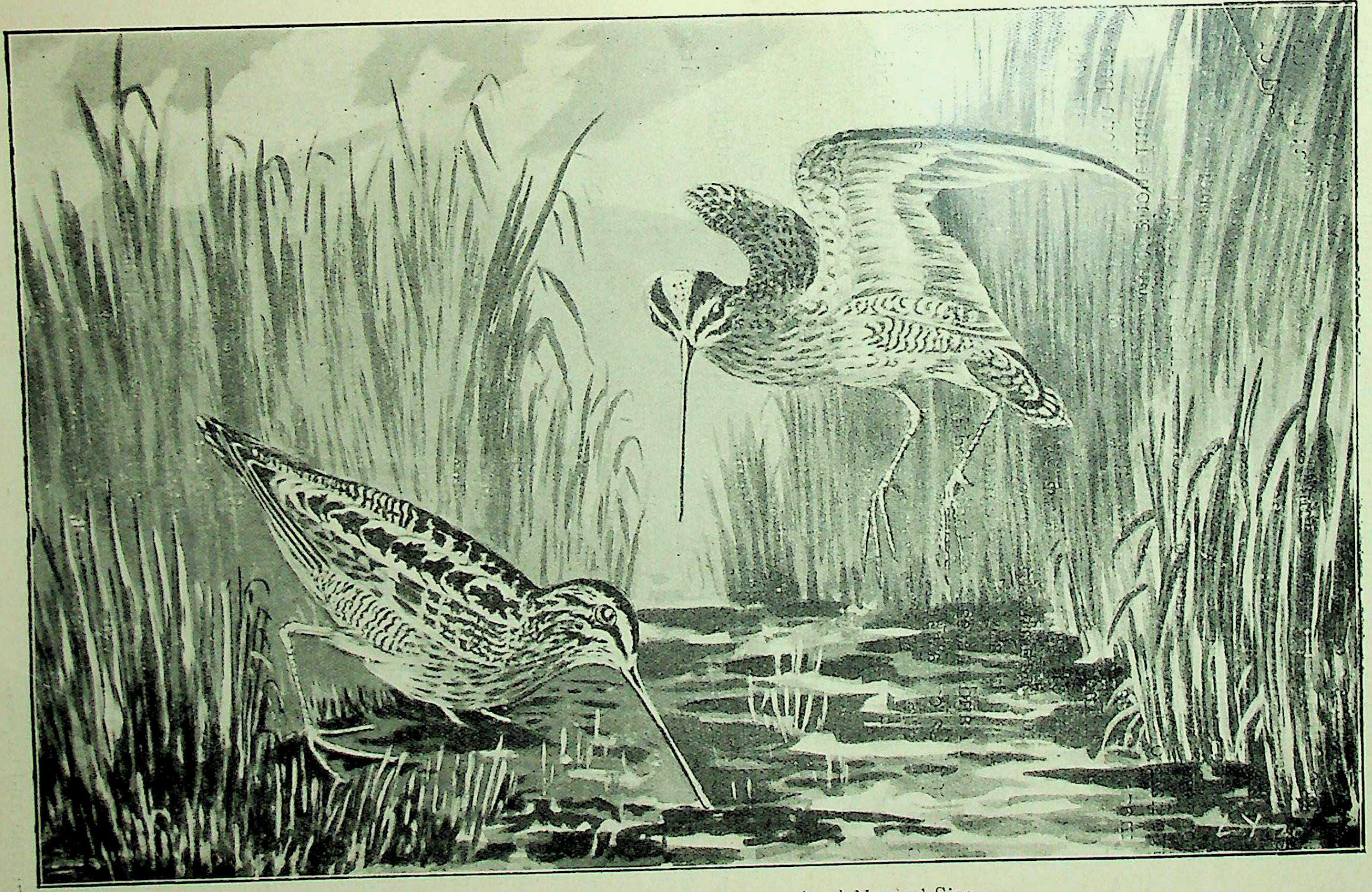
I do not go so far as to say that you never see a snipe on the ground in India, because I know a man who sees them and shoots them sitting! This man has not unusually keen eyesight, but he is an indifferent shot and, being a planter, his friends, when they come to breakfast with him, expect to find on the table snipe which have fallen to his gun. In order to satisfy his friends he gets up early in the morning and repairs to the marsh where snipe live and puts himself between them and the rising sun. If the vegetation be not too dense he is able to see the snipe feeding in the shallow water.

After a little experience the sportsman soon learns to distinguish at sight between a snipe and a sandpiper or snippet. For the benefit of those who are not experienced, let me indicate some of the methods of distinguishing. I have already alluded to the fact that snipe keep closely to cover. All birds which get up from cover in marshes are not snipe; snippets often do this. Most sandpipers have more white in the plumage than snipe, so that if a snipe-like bird, showing a good deal of white, gets up, you may safely set it down as a sandpiper. Again, when snipe are flushed, the full and the pintail almost invariably utter a curious, short, sharp, monosyllabic alarm note. The bill of all snipe, except the painted snipe which is a sandpiper rather than a snipe, is quite different from that of a snippet. The bill of a snipe is long—at least half as long again as the shank. It is rounded and thickened at the tip. The upper mandible is longer than the lower, the latter fitting closely into the swollen knob of the upper one. The eye is very large. The upper plumage of the snipe is fawn streaked with black, while the upper plumage of most sandpipers is not streaked and rarely exhibits any black.

Before describing each species of snipe in detail, I feel constrained to quote Eha's excellent summary of the differences between the bill of a true snipe and that of a snippet or sandpiper. "The long beak of the snipe is soft and sensitive at the point, being a peculiar instrument wherewith the fastidious bird, probing the spongy mud, feels and draws out the tasty worm. Thus it grows fat and very savoury. The snippet's bill is a pair of forceps merely, with which it picks up any vulgar fare that offers: small crab or snail, or water flea, and they impart to it their flavours mingled." Needless to say, the idea that snipe live by suction is absurd. As Finn remarks, the snipe is a gross feeder, and those who eat the trail of snipe should bear in mind that they are eating the intestine of the bird which probably contains worms in a semi-digested condition!

The full or fantail or common snipe (*Gallinago coelestis*) is a bird rather smaller than a myna, being ten inches in length; of this, one-fourth is tail and one-fourth bill. The upper plumage is a mixture of black and buff, with three pale longitudinal streaks on the head, separated by two black streaks. There are two buff streaks down the back and a transverse band of cinnamon near the tip of the tail which consists of fourteen or sixteen feathers. This snipe frequents the muddy fringes of *jhils*, sometimes being found in water deep enough to cover the greater part of the legs of a standing man. It is also to be found in numbers in flooded or wet paddy fields in suitable localities. Its note, when it rises, is usually syllabised as " psip "; to me it sounds like a sharp, low quack.

The pintail snipe (*Gallinago stenura*) closely resembles the common snipe in size and general appearance. The bill is not quite so long and the swelling at the tip not so pronounced. The pintail has from twenty to twenty-eight tail feathers. The middle ten are broad and soft as in the fantail, while the outer ones are very narrow and stiff, hence the name " pintail."



COMMON SNIPE (GALLINAGO COELESTIS). ½ Natural Size.

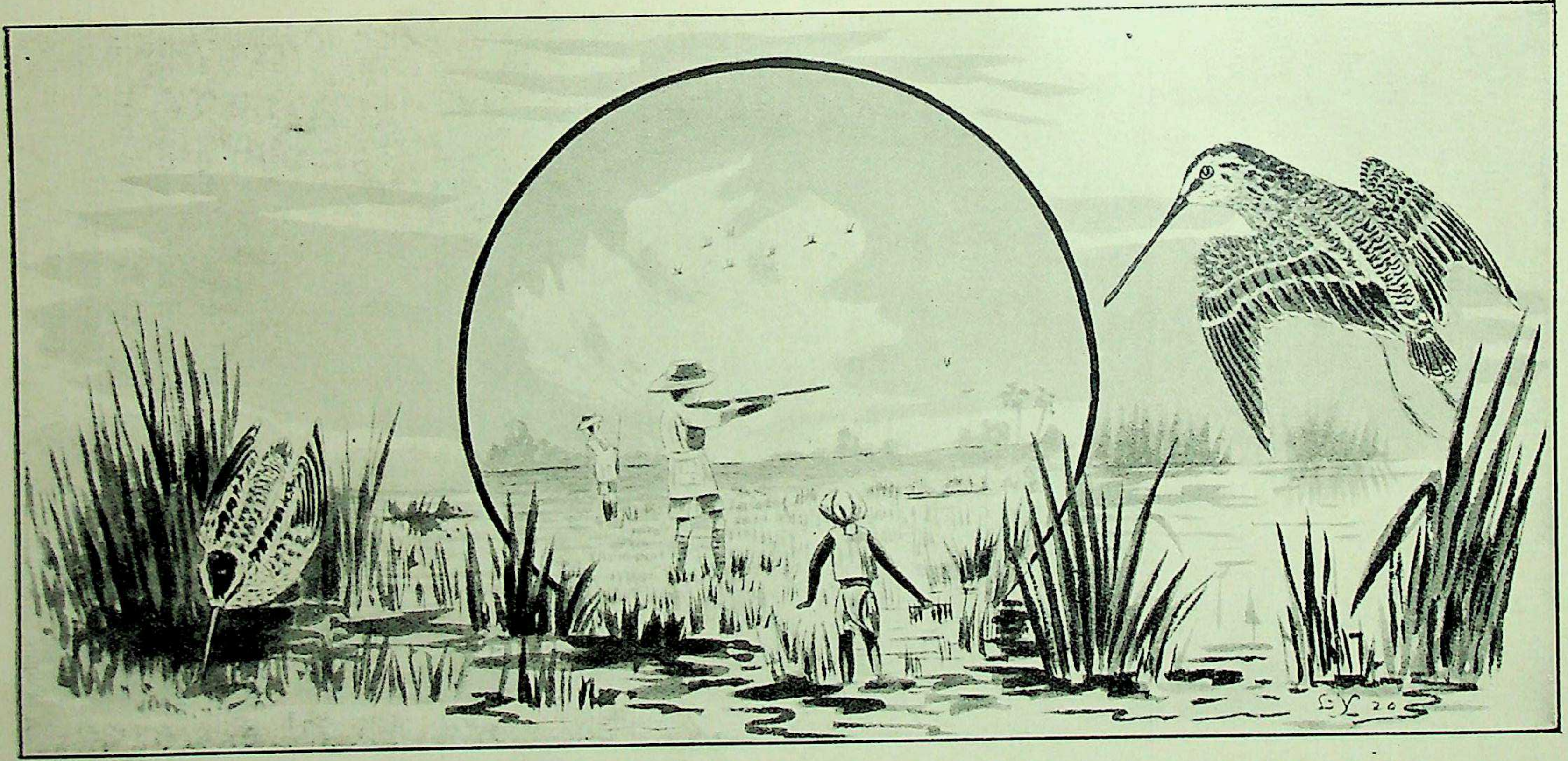
The habits of the pintail are like those of the full snipe. When flushed it emits a call which is sharper than the "psip" of the fantail.

The full and the pintail snipe are winter visitors to India; they do not breed in this country. The advance guard arrives at the end of August or the beginning of September, but large bags are rarely made before the middle of October. Snipe begin to depart to their breeding-grounds about the middle of March; the latest to depart leave in the first half of May. The full snipe spreads itself throughout India. It is more abundant than the pintail in the whole of the western part of Northern India as far south as the Godaveri. It is rare in the extreme south of India and in Assam and Burma. The pintail, which arrives earlier than the full snipe, is rare in the North-West Frontier Province, the Punjab and the United Provinces, but becomes common in the south and the east of India and in Burma.

About Calcutta the two species appear to be equally abundant. As its bill is far less sensitive than that of the full snipe, the pintail feeds less on worms and more on insects, grubs, molluscs and crustacea, and is found more often than the full snipe in comparatively dry places.

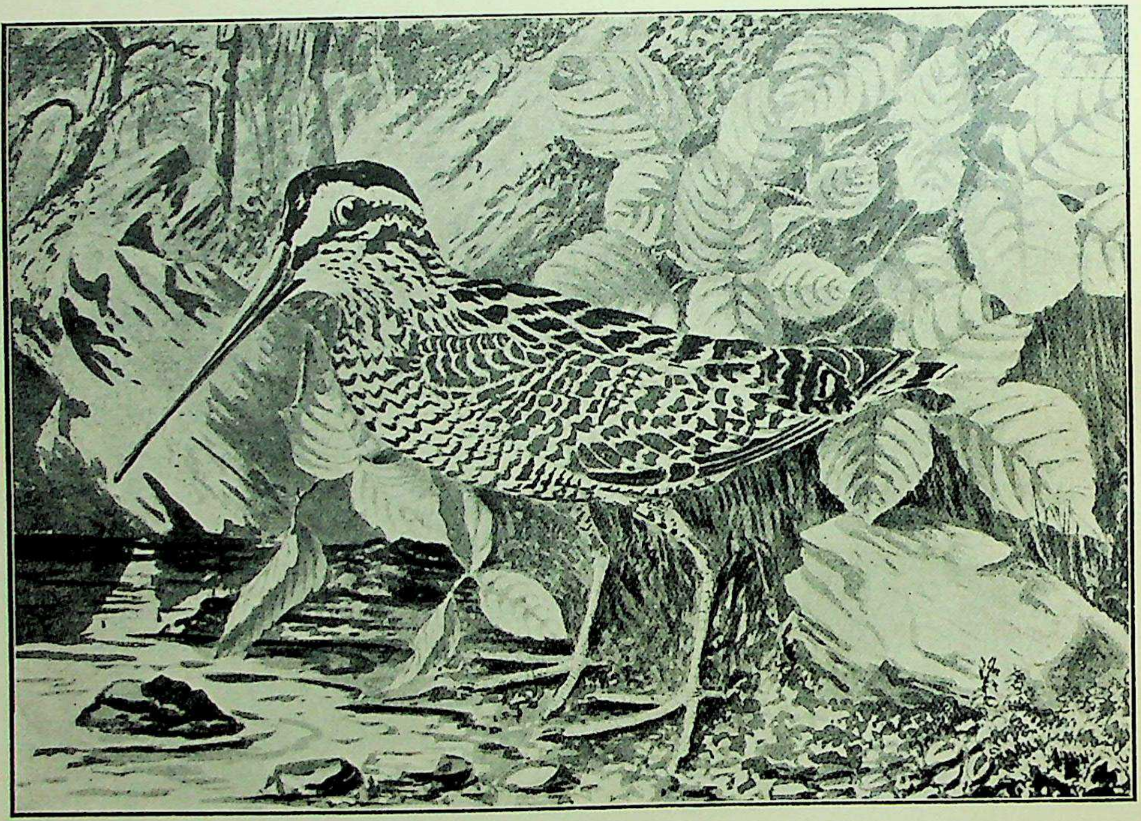
Does the solitary or double snipe (*Gallinago major*) occur in India? I doubt it. But if you shoot a snipe rather larger than the full, with a slightly smaller bill and having the four outer tail feathers all white save for a little black at the base, preserve its skin and send it to a museum to be identified, for it is probably this species, which, if it occurs at all in India, is exceedingly rare.

We now come to the jack snipe (*G. galinulla*). This is much smaller than the snipe I have described, being not much larger than a quail. The bill is one-and-a-half inches long—an inch shorter than that of the full snipe. The markings and general appearance of the bird are like those of the full and the pintail snipe, but there is no buff streak on the middle of the crown. It has twelve tail feathers, which are soft like those of the fantail but somewhat pointed at the tip. It is a most succulent bird. Its habits are similar to those of the snipe described above. It is perhaps rather more solitary than the full and the pintail snipe and is fond of lying up near to the edges of flooded fields. When flushed it rises noiselessly and its flight is not so rapid. It does not as a rule rise so high, and to quote Tickell, flies "in a vacillating way as if at every moment about to settle. It then either drops suddenly as if dead or gives a little shoot into the air first and then falls as it were to the ground. When once alighted it squats, so that no bird is more easy to mark; indeed, one knows almost the very blade of grass it will spring from when flushed again." Like the full and the pintail, the jack snipe does not breed in India, but visits us in great numbers from September to March. It is common in all parts of the country, except Burma and Ceylon.



JACK SNIPE (GALLINAGO GALINULLA). ⅙ Natural Size. SOLITARY SNIPE (GALLINAGO SOLITARIA). ¼ Natural Size.

Before passing on to describe some snipe of local distribution, let me say, for the benefit of inexperienced sportsmen, that it is not advisable to begin snipe-shooting too early in the morning. When flushed before 8 or 9 a.m., at any rate in the Punjab and the United Provinces, snipe usually rise in whisps at a distance of sixty or eighty yards and fly a long way. When the sun is high in the heavens they lie much closer and do not fly so far. Always beat right up to the end of a rice-field, because the jack snipe usually congregate there, quite close to the *band*, and often rise almost from between the feet of the *shikari*. Do not be in too great a hurry to fire; snipe usually zig-zag most at the beginning of their flight.



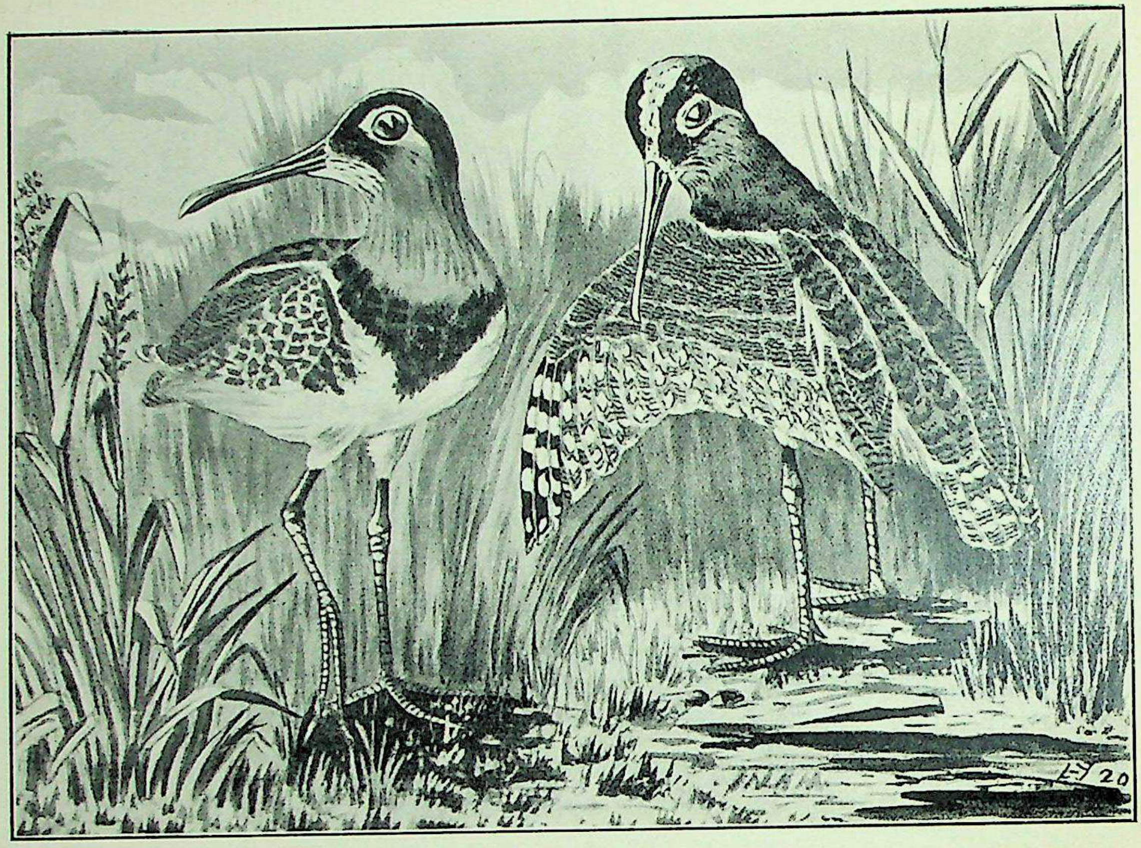
THE WOOD SNIPE (GALLINAGO NEMORICOLA). About $\frac{1}{3}$ Natural Size.

Mention must now be made of two large snipe—the wood snipe (*G. nemoricola*) and the Himalayan solitary snipe (*G. solitaris*). These are likely to be found only in the Himalayas and at their base and in other hilly countries. They both breed in the Himalayas. They are larger birds than the full snipe. The wood snipe appears to be a snipe which is trying to turn into a woodcock. Its lower parts are white with brown pencillings. The four pairs of outer tail feathers are pin-like and of a brown hue. The lower parts of the solitary snipe are pure white and the outer tail feathers, which are also stiff and narrow, are white, barred with brown. By these two features may these birds be differentiated. The man who shoots in the plains is not likely to come across either species.

The woodcock (*Scolopax rusticola*) always gives me the impression of a partridge which is trying to become a snipe. It has the plump body and the short legs of the partridge and the long bill (swollen at the tip) of the snipe. The woodcock is fourteen inches long—nearly four inches longer than the full snipe. The bill is three inches in length. The upper plumage is brownish grey, barred with rufous and blotched with black. The short tail is mostly black, tipped with dark grey above and silvery white below. The tail has twelve feathers; the eyes are very large. It is a bird of the hills. It is a winter visitor to the Nilgiris, but is found all the year round in the Himalayas, where it breeds at elevations of over 10,000 feet. The woodcock is probably the first of game birds as an article of the *menu*. It is not a fast flyer, but the habit of "jinking" and the fact that it usually occurs in wooded country render woodcock shooting excellent sport.

In conclusion, we must notice the painted snipe, which is far more of a sandpiper than a snipe; but, inasmuch as it is fit to put upon the table and requires flushing, it comes within my definition of a game bird and is habitually shot as such by sportsmen.

The bill is shorter than that of the true snipe, and the upper mandible has a slight downward curve and shows very little swelling at the tip. Not only is the bill of the "painter" not snipe-like, but the bird has neither the colouring, the shape, the flight nor the flavour of the true snipe. Its legs are longer, wings broader and blunter than those of the snipe proper. The sexes differ considerably in colouring—an unusual feature both among snipe and sandpipers. As a general rule, when the sexes of a bird differ in appearance it is the cock that has the more showy plumage. With the painted snipe (*Rostratula capensis*) this rule does not hold good. The upper plumage of the cock is an intricate mottling of olive green and white, set off by a buff ring round the eye, prolonged into a streak behind. On the crown of the head a buff band runs longitudinally down the middle, and there are two bands of similar hue on each side of the back. The lower parts are white; the wings and tail are grey, with black pencillings and buff spots. The hen may truly be described as a painted lady. It is she who is responsible for the English name given to the species. Her wings and tail are like those of the cock; the band round the eye and the streak behind are white. The head, throat and upper breast are rich chestnut, passing into black at the junction with the white abdomen. Her back is rich green, pencilled with black. On each shoulder is a white patch of rather long pointed feathers. As regards size, the painter stands midway between the full and the jack snipe.



Painted Snipe (Rostratula capensis). About 2/5 Natural Size.

The painted snipe is found all over India, but, as it requires damp ground, it moves from a locality when this becomes dried up by sun and want of rain. "The ground most to its liking," writes Finn in *How to Know the Indian Waders*, "is that which is moist rather than that actually flooded, and it likes plenty of cover in the shape of rushes, etc. It feeds mostly on insects and snails, also eating paddy and grass seeds, and does not bore for its food like a snipe."

The bird is often flushed when one is shooting snipe at the fringe of a *jhil*. It has skulking habits and is difficult to flush. It is not a fast flyer, but I would not go so far as Blanford, who declares that it affords no sport in shooting. I have often missed a painter.

As I have no first-hand knowledge of the nesting habits of this species, I quote the following from Hume:—"I have only once myself taken a nest of the painted snipe, and that was at the end of August, in a small swamp on the Diamond Harbour Road, about six miles from Calcutta. It was on very wet ground in the midst of low rushes and consisted of half-dry rush twisted round into a tolerably neat and compact nest. It measured 6 inches in diameter exteriorly and less than 4 inches interiorly, and the cavity, which had no lining, was a good inch in length. It contained two quite fresh eggs." The eggs are pale coffee colour, heavily blotched with dark brown.

PEAFOWL, JUNGLE FOWL AND SPURFOWL.

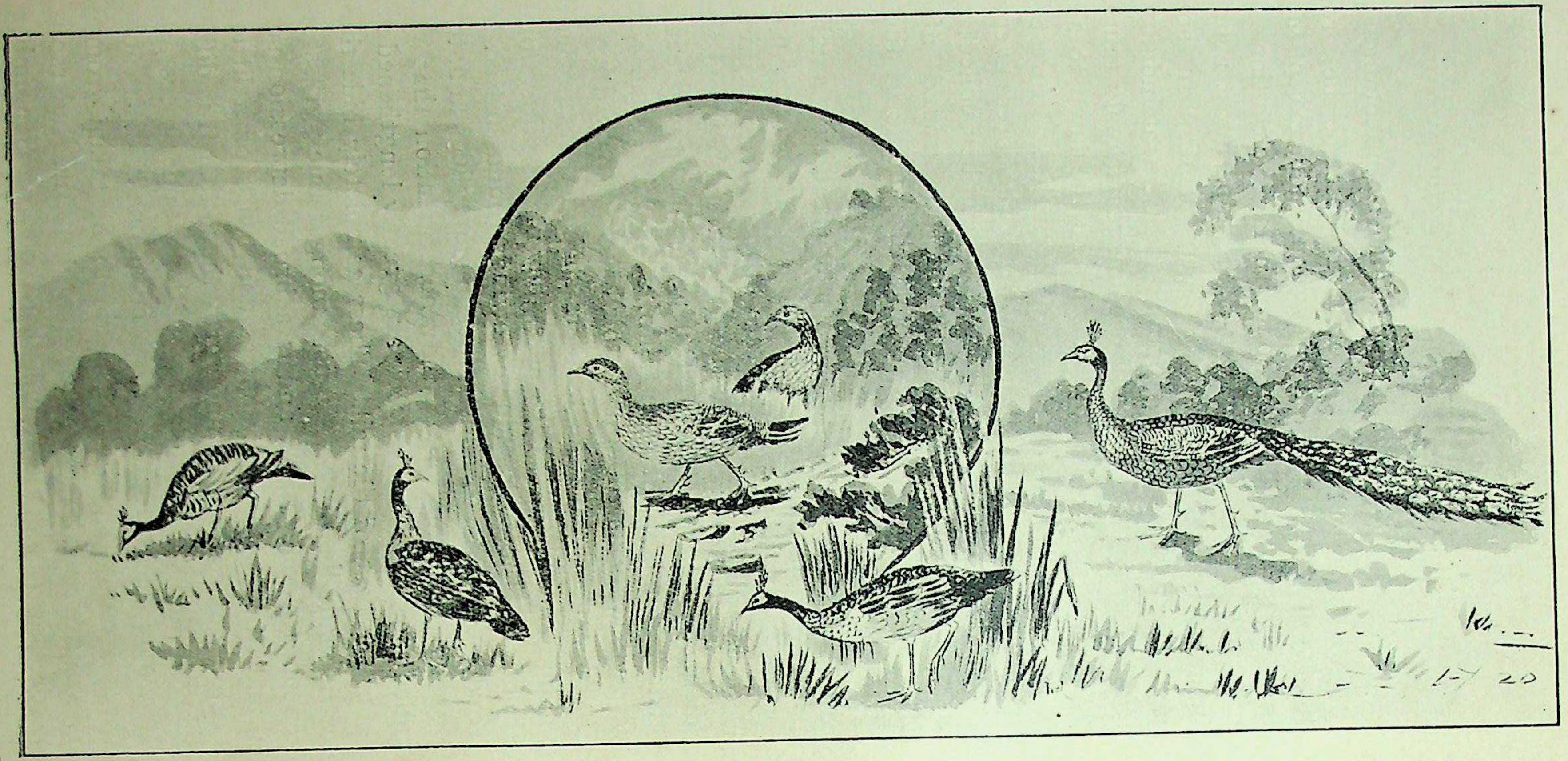
As everyone is familiar with the appearance of the common peafowl (*Pavo cristatus*), it is not necessary for me to describe the bird.

This fine creature is distributed throughout India, except the Himalayas above 2,000 feet, the hills of South India at elevations of 5,000 feet; Sylhet, Cachar and Manipur. It is, perhaps, most abundant in the sub-Himalayan districts of the U. P. It is plentiful in those parts of the country, such as Muttra, Rajputana and Central India, where it is protected. In such places peafowl become remarkably tame, roosting and nesting in gardens and coming on the lawn to share the grain thrown to the domestic pigeons. Where the sal forest borders on cultivation, the peafowl and junglefowl leave the forest every morning and evening to visit the fields. In the open they collect in small mixed flocks and scratch and pick things off the ground after the manner of farmyard poultry. They spend the middle of the day in sal trees.

Peafowl feed on grain, buds, insects, lizards and even small snakes. The breeding season is during the rains. Before nesting operations begin, the cocks go through an elaborate process of courtship. They select clearings in the forest where the birds assemble, and the cocks dance and display before the hens. During display the great train is erected so that it stands up like the tail of a fantail pigeon. Then the whole quivers violently as though the bird were attacked by a severe fit of ague. So violently are the feathers shaken that, as the decomposed ends flap against the other feathers, they make quite a loud noise. After a little of this, the cock suddenly swings round so that his back faces the female. This exposes his rather ungainly legs and, to human eyes, quite spoils the exhibition! I may here mention that what are popularly called the tail of the peacock are greatly lengthened feathers that grow over the base of the tail. These completely hide the tail.

The nest is made in July or August amongst thick grass or dense bushes, often on a sloping bank, and is a broad depression scratched by the hen, and lined with a few leaves and twigs or a little grass. The nest is often well covered by undergrowth, so that it is difficult for a human being to approach it, but is sometimes under trees and quite exposed. It would seem that peafowl occasionally nest above the ground. Three fresh peafowl's eggs, said to be taken from an old white-backed vulture's nest, were once brought to Mr. Anderson.

Again Professor Littledale found at Baroda on September 30th, 1884, a nest with five eggs in a triple fork in a mango tree, 12 feet from



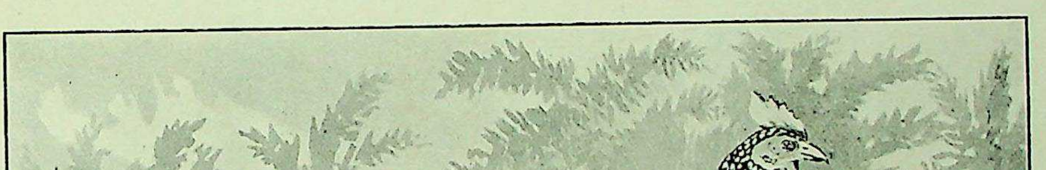
Red Spurfowl (Galloperdix spadicea). About 1/7 Natural Size. Peafowl (Pavo cristatus). About 1/16 Natural Size.

the ground. He attributes this unusual situation to the fact that the country there is often flooded. In captivity peafowl prefer to nest on shelves raised above the ground.

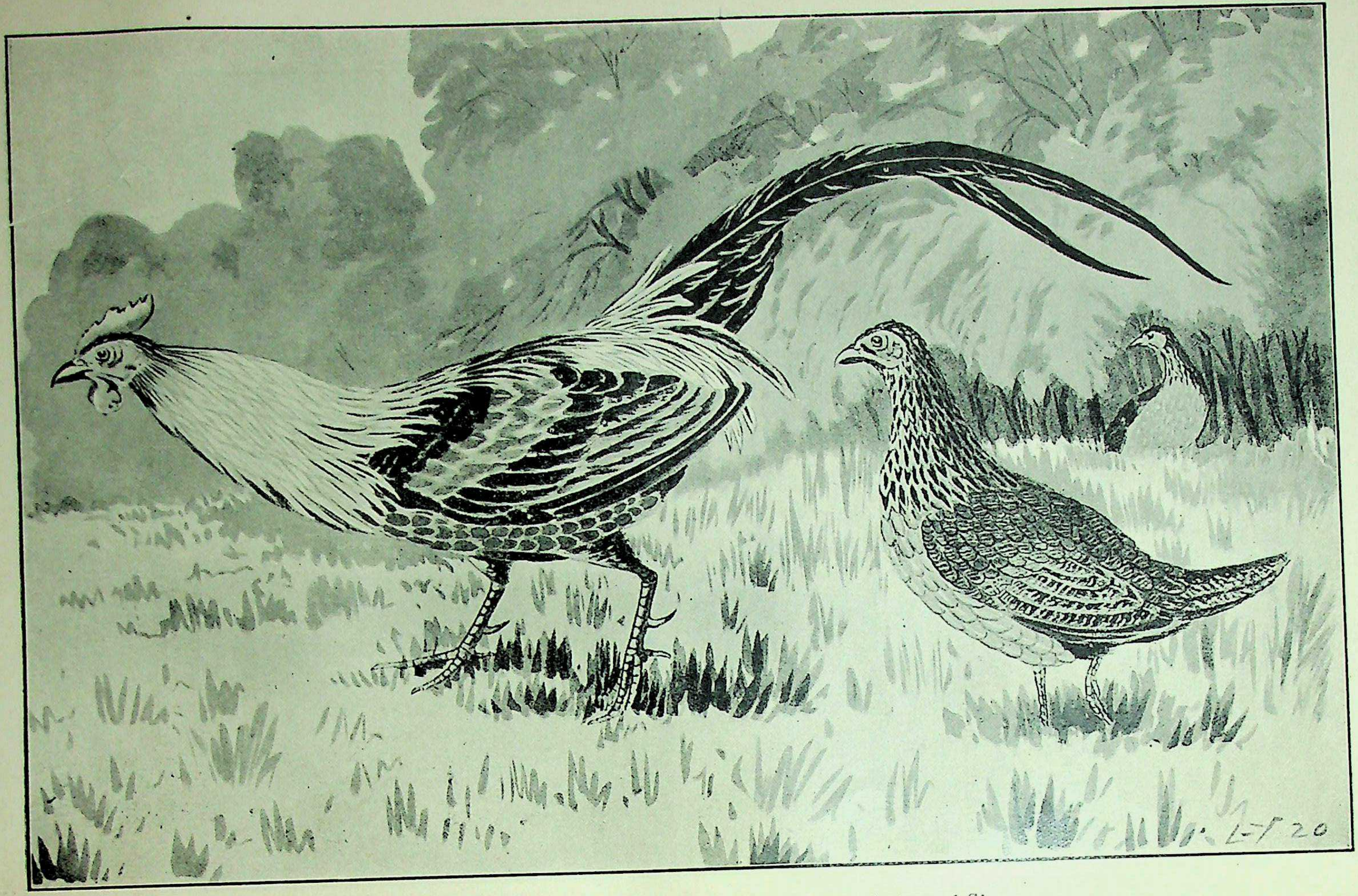
As most people are aware, the call of the peafowl is a miaou much like that of a cat.

The peafowl that dwells in Burma does not belong to the same species as that which is spread all over India. The former is known as the Burmese or Javan peafowl (*P. muticus*). In this the feathers which compose the crest are bunched together; they are webbed along their whole length, instead of only at the tip, as is the case with the Indian peafowl. The glistening feathers on the neck of the cock are green instead of blue: the wings are black and chestnut instead of buff. The call is much less harsh than that of the Indian bird. The Burmese species has far more retiring habits: this is probably the result of persecution.

There are three species of junglefowl in India—the red junglefowl (*Gallus ferrugineus*), which is spread over the forests of Northern India from the lower Himalayas to the Godaveri, and eastwards through Burma to Siam; the grey junglefowl (*G. sonnerati*), which dwells in the forests of South India, and the Ceylon junglefowl (*G. lafayettii*), which is confined to the island from which it derives its name.



GREY JUNGLEFOWL (GALLUS SONNERATI). About 1/5 Natural Size.



Red Junglefowl (Gallus ferrugineus). About $\frac{1}{4}$ Natural Size.

The red junglefowl is the bird from which the domestic breeds must have originated. In appearance it is very like the bantam. Description is unnecessary—the red wattles and comb and the orange and red hackles render the bird unmistakable even during flight.

Wherever you find sal forest in Northern or Central India, there will you see red junglefowl. This is true even of small isolated patches of sal trees in the Ranchi district. But I think that junglefowl occur also in forests where there are no sal trees. They must have forest or a patch of dense jungle in which to lie up during the day. Possibly, if they were completely protected, they would venture into private gardens as peafowl do. On one occasion, during the close season, I noticed a number of junglefowl feeding among my followers in a camp in the Pilibhit district.

The crow of the red junglecock is shriller than that of domestic breeds, but is very like that of the bantam. Junglecocks seem to crow mostly about sunset. I do not remember having heard them crow in the small hours of the morning as the domestic chanticleer does. If you disturb a junglehen when feeding on the ground, she gets up with a cackle like that of a barndoor hen.

As has been remarked above, the junglefowl that live near the edge of a forest go to the fields in the early morning to feed; they then might be mistaken for ordinary farmyard fowls, but for the large number of cocks in the company. Sometimes the company consists entirely of cocks, at others of hens, but more usually the gathering is a mixed one. Junglefowl fly fast and well, their flight being very like that of a pheasant, thus they afford excellent shooting and are delicious table birds.

The breeding season begins early in March. As in the case of pheasants, the nest is a slight hollow in the ground, covered with leaves and placed in the heart of the forest. Five or six dull white eggs are laid. The incubating hen sits close; the best way to find nests is to go into the jungle accompanied by a good dog.

The grey junglefowl is very different in appearance from his northern brother. So much is this the case, that, as Finn remarks, "a single feather should, in many cases, identify it." The neck hackles are very curiously constructed. Each feather is black with a white shaft, a white spot near the end and a glossy yellowish brown spot at the tip. These spots resemble sealing wax in appearance, being horny plates formed by the webs of the feathers being soldered together. These hackles are moulted after the breeding season and are then replaced by black ones. The comb, wattles and face are bright red. The rest of the body plumage is dark grey, each feather having a white shaft and grey edges. The wing and tail feathers are bluish black, glossed with purple.

The hen has scarcely any comb and no wattles, but displays a patch of bare red skin round the eye. The distribution of this species is, to quote Blanford, "near the eastern coasts as far north as the Godaveri, and in the Central Provinces its limit is some distance east of Sironcha, Chanda and Seoni. It is found throughout the Nerbudda Valley west of Jubbulpore, and in parts of Central India and Rajputana, as far as the Aravallis and Mount Abu, but no farther to the northward or westward. It is met with near Baroda, but has not been observed in Kathiawar." At the places where the red and the grey junglefowl meet they sometimes interbreed. There is a patch of sal forest near Pachmari where the red junglefowl lives surrounded by his grey cousins. Otherwise the distribution of the two species does not overlap. The call of the grey junglefowl is very different to that of the red bird and is difficult to describe, though, when once heard, is easily recognised. Davidson describes it as "Kuck-kaya-kaya-kuck—kyukun, kyukun."

Having spent only a few weeks in the haunts of the grey junglefowl, and not having come across the nest, I cannot do better than reproduce the excellent description of Miss Cockburn: "The hen forms her nest in weeds on the ground, gathering a few dry leaves and sticks about her. The number of eggs found in a nest is from seven to thirteen. They are of a dirty white or buff colour. The hen, when leaving the nest to seek food, generally covers the eggs with dry leaves, no doubt hoping by so doing to screen them from harm. The nests are found during March and April. I have on two or three occasions set junglefowl's eggs under domestic hens and reared the young. It was amusing to see how soon they showed signs of their wild nature. When about a fortnight or three weeks old, their wing feathers were so long as to enable them to fly up into trees at any moment, while their foster-mother stood below wondering at an accomplishment she never witnessed in her own progeny. At night they much preferred roosting on some tree in the garden, and when a few months old they invariably went off to the woods."

This little vignette knocks the bottom out of the theory of the school of ornithologists (of which Mr. Long, the author of "The School of the Woods," is one) that writes volumes about the education of young birds by their parents. Just as young ducks reared up under a hen take to water without any teaching, so do young birds fly of their own accord when their wings are strong enough. Parent birds have not the brain power to impart instruction to their young, nor have the young sufficient intelligence to receive instruction.

The Ceylon junglefowl (*Gallus lafayettii*) is better entitled than the red junglefowl to the epithet red, as not only are the back and hackles of the cock red, but also his breast and upper abdomen. He resembles the red rather than the grey species. The hen has hardly any comb and no bare patch on the face. She is a bird of homely plumage, brown above, cream below, mottled with buff and black. As there is but one species of junglefowl in Ceylon, and as this is confined to the island, further description is superfluous. The crow of this bird is said to resemble the words "George Joyce" with a preliminary cluck. The habits are like those of the two mainland species.

Spurfowl are, as the Latin name shows, half partridge and half junglefowl. They are peculiar to India and Ceylon, being found nowhere else in the world. There are three species of them—two belonging to India and one to Ceylon. This being so, it is tempting to regard the corresponding junglefowl as mutations from spurfowl. The northern species are called the red spurfowl (*Galloperdix spadicea*). The distribution of this bird appears to be rather capricious. It may be looked for in any well-wooded part of India south of the Himalayas. It frequents the forest-clad hills of the peninsula. The cock is about fourteen inches in length, with a six-inch tail. His prevailing hue is chestnut red. He has no comb, but has red skin round the eye; the legs are red. The hen, which is slightly smaller, is mottled black and buff. The red spurfowl, which is well provided with spurs, is a shy bird that trusts to its legs rather than its wings when it seeks cover. The nesting habits are similar to those of junglefowl.

The painted spurfowl (*G. lunulata*) occurs in forest tracts south of the Ganges. The head, shoulders and tail of the cock are black, glossed with green; the remainder of the plumage is buff, spotted with black, or black and white. The hen is a dark brown bird washed with red in parts; the legs are brown. This bird prefers rocky hills to forests, otherwise its habits are similar to those of the red spurfowl.

The Ceylon spurfowl (*G. bicalcarata*) is the only species that occurs in Ceylon. The cock is black, white and chestnut, the breast is white, the tail and wings are black, the rump is chestnut, and the rest of the plumage speckled black and white. The hen is dull red brown. The bill, legs and a patch of bare shin round the eye are red in both sexes.

PHEASANTS.

In the case of non-sporting birds the plan followed in this book is to describe only the common birds. In the case of birds that are shot for sport it is deemed desirable to mention every species found in India, because the sportsman, in the course of his wanderings after game, may shoot any of them, and a rare bird is as easy to hit as a common one. Thus it comes to pass that in this chapter and in the two that follow I shall have to deal with rather a large number of species. These chapters will in consequence display many of the dry bones of ornithology. But I shall make it clear which are the common birds, that is to say, those which are likely to be met with any day by the *shikari*, so that the reader can afford to skip the portions relating to the more uncommon fowl; keeping the book by him for reference if he is fortunate enough to shoot an uncommon bird.

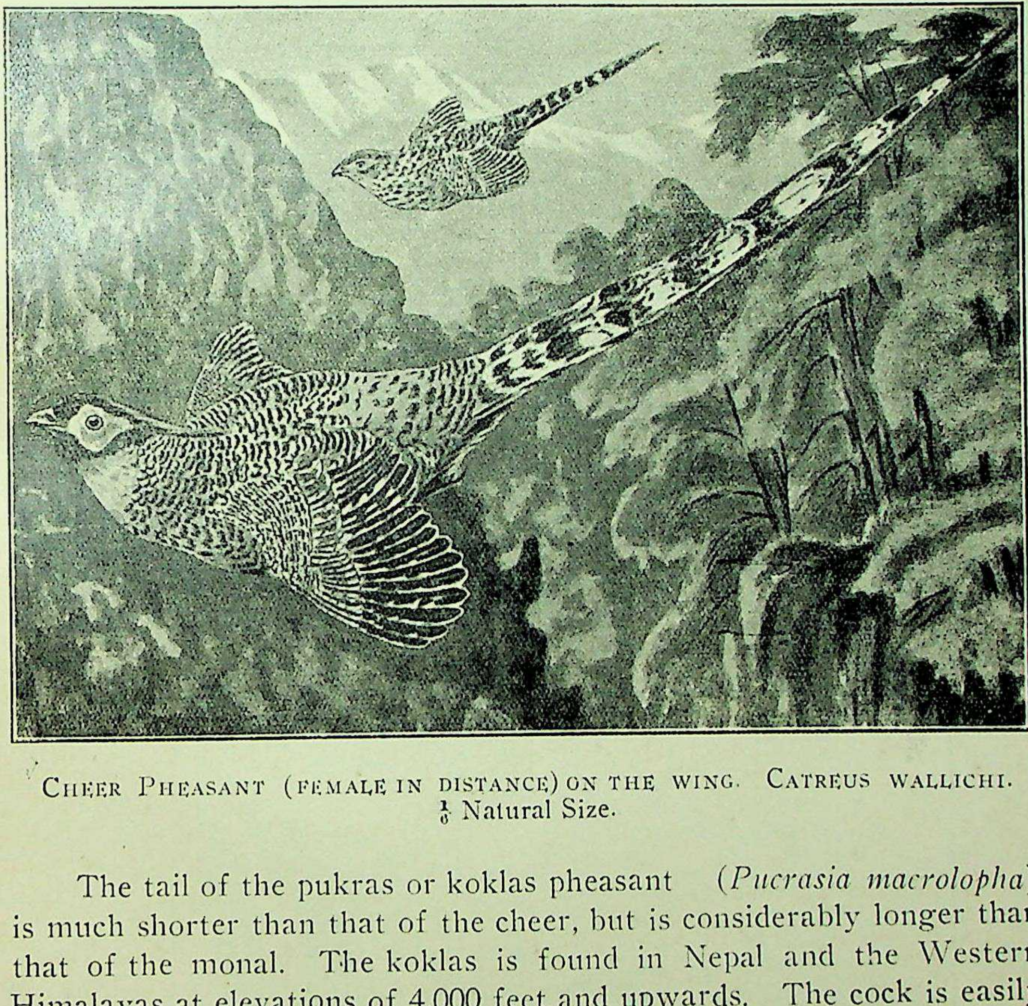
To give a satisfactory definition of a pheasant is beyond my powers. A large ornate bird with a well-developed tail is, I am aware, rather a poor effort, but it is the best I can do.

The classification of the pheasant clan has proved a nut upon which many an ornithological tooth has been broken. I propose, therefore, to cast scientific classification to the winds and deal with pheasants according to their habitat. Pheasants within the Indian Empire occur in the Himalayas, Assam, Burma and Tenasserim. Only one genus—that containing the kalij pheasants—extends to both the Himalayas and the other areas mentioned, so that by classifying the pheasants as (*a*) Himalayan, (*b*) others, the sportsman who shoots a bird will, when he tries to identify it, at once be able to eliminate certain species.

The Himalayan Pheasants.

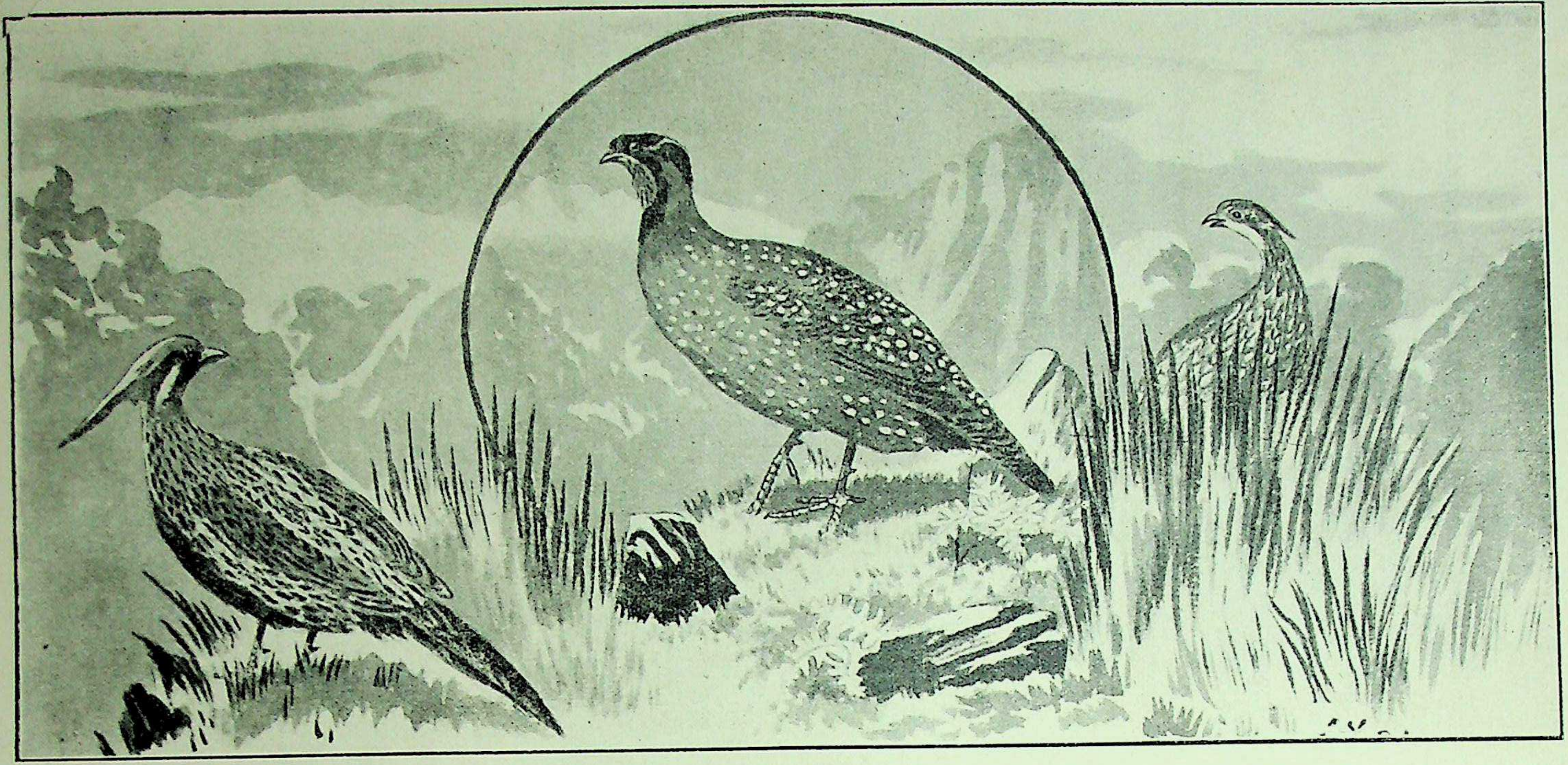
As the cheer pheasant (*Catreus wallichi*) is the Indian species that is most like the English bird, it is only fitting that it should be the first to be presented. The cock is about a yard in length, the tail being nearly two feet long; the hen is some twelve inches shorter. Both sexes have a patch of scarlet skin on each side of the face; the only other Indian pheasants that have this are the kalij and Mrs. Hume's pheasants. The last is not found in the Himalayas. The cheer pheasant has a short crest projecting from the back of the head. These two features, together with the long slender tail so characterstic of the English bird, make the identification of a cheer of either sex an easy matter. The only other Indian pheasant with a tail like this is Mrs. Hume's which, as has been stated, is not found in the Himalayas.

The cock cheer is a buff bird, barred with black; the tail is rich buff with broad black and chestnut cross bands. The hen is very like the cock, the chief difference being her smaller size and the fact that the dark bars in her plumage are less bold and conspicuous. The cheer pheasant is found from Chamba to Katmandu at elevations of 4,000 feet and upwards. Like all other members of the tribe, it haunts forests. Its call is something like *chir, chir, chir.* In the hot weather it lays about a dozen eggs in a hollow in the ground lined with leaves.



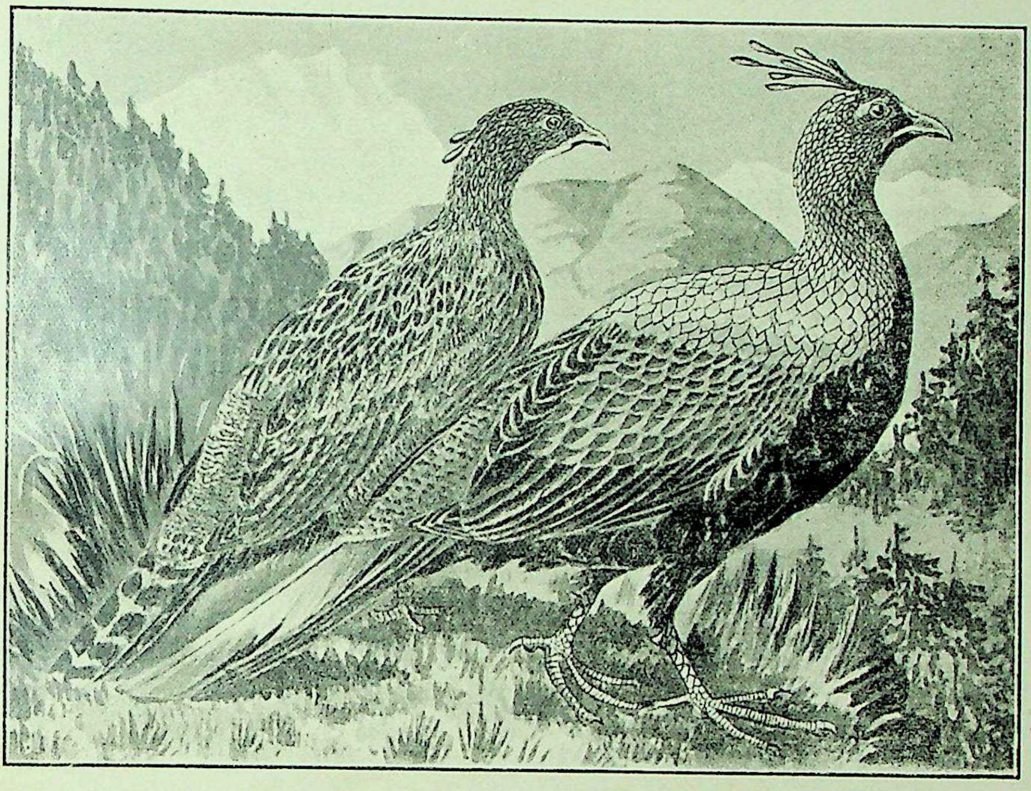
CHEER PHEASANT (FEMALE IN DISTANCE) ON THE WING. CATREUS WALLICHI.
$\frac{1}{6}$ Natural Size.

The tail of the pukras or koklas pheasant (*Pucrasia macrolopha*) is much shorter than that of the cheer, but is considerably longer than that of the monal. The koklas is found in Nepal and the Western Himalayas at elevations of 4,000 feet and upwards. The cock is easily identified, because he possesses three crests, one in the middle, of brown hue, and a long one on each side which is green, like the rest of the head. There is a large white patch on both sides of the head. The breast and abdomen are chestnut, as are the middle tail feathers; the other tail feathers are black, tipped with white. The rest of the body is black, grey and buff, each feather being black in the middle with a brown or grey border. The hen lacks the side crests. She is a dull brown bird with a white throat and black markings on the brown feathers. The habits of this species are like those of the cheer. Its call sounds like *kok kok pukras.*



Crimson Horned Tragopan (Tragopan satyra) in centre. About $\frac{1}{9}$ Natural Size. Male and female Pukras (Pucrassa manolopha) at sides. $\frac{1}{6}$ Natural Size.

The cock monal (*Lophophorus refulgens*) is, as regards colouring, the most splendid of the pheasants, and this is saying much. The brilliance of his plumage more than compensates for the insignificant tail. As the monal is found during the summer at levels far above those of the hill stations, many people spend their time in India without seeing one of these beautiful birds in a state of nature. I myself have only once come across the birds, so that my knowledge of them is confined to what I have read and what I have observed in the case of a bird I once kept captive. This being so, let me reproduce the account of the monal written eighty years ago by Mr. P. Baron when on the way to Kedar Nath: "After several hours of toilsome ascent of four or five thousand feet, we reached the boundary line of the dominions of these gorgeous birds and I soon recognised traces of my old friends on the roadside. The monal being in the habit of digging the roots of a variety of aromatic plants which flourish here, their haunts are at once identified. In a few minutes the well-known plaintive cry gave warning of their vicinity, and before long, one of them took to wing and swept over our heads, down into the forest, with the velocity of an arrow from a bow. I do not believe there are many sportsmen who could think of shooting the first monal pheasant that comes in view. Should the sun, at the time, happen to be shining on the plumage of this magnificient bird, one is so struck with admiration of the sight that he does nothing but stare



LOPHOPHORUS REFULGENS, MONAL, MALE AND FEMALE. $\frac{1}{5}$ Natural Size.

in astonishment. Their flight is most sublime. After the first flutter in rising, they extend their wings and make one majestic sweep downwards without apparently exerting a muscle or moving a single feather, until they reach their roosting place in the depths of the forests, perhaps a mile or two below you, when a repetition of the plaintive cry is heard just as they disappear from your view. Should one of them, which you may not have heard or seen to take to flight, sweep over your head, you hear a rushing sound like a rocket in its passage, and the bird is gone almost before you have had a glimpse of him. Their flight, too, is so graceful and so elegant that it appears to be solely the result of volition, while the colours of their plumage are so brilliant and so variegated under the different shades of light that any attempt either at painting them or describing them would be abortive. I cannot think of anything so applicable to them as the following lines from Milton's 'Comus':—

> 'I took it for a fairy vision
> Of some gay creatures in the element
> That in the colours of the rainbow live
> And play i' the plighted clouds.'

Often and often, on seeing these proud birds swimming above the forest and displaying their matchless plumage, has this passage been suggested to me that "Solomon, in all his glory, was not arrayed like one of these.'"

The cock monal is a study in brilliant, rich, metallic, burnished purple, which seems to be glossed now with green, now with bronze. So glistening, so resplendent, so refulgent is it, and so great is the sheen on the plumage that every coloured illustration of the bird that I have seen seems positively libellous. Mr. R. G. Wright, however, has achieved the impossible inasmuch as he has painted a picture that really does justice to this grand bird. Not content with giving it such plumage, Nature has endowed the bird with a purple crest of fine feathers, broad at the end like those that compose the crest of the peacock. The lower back is white and the tail pale cinnamon. This looks quite out of place against the brilliant body plumage. The hen is a homely brown bird. Her only ornament being a short brown crest. The cock monal is about twenty-eight inches long, the tail being nearly ten in length. The breeding habits of the Monal are those of the pheasants already described, but the clutch of eggs is small for a pheasant, five being the average complement.

Only second to the monal in brilliance are the tragopans or horned-pheasants; the males display brilliant crimson in their plumage. The cocks possess, in addition to a crest, a pair of fleshy horns which arise just above the eye, also a fold of skin along the throat. When a male shows off before the hen the horns elongate and the fold of skin expands into a bib. There are three species of tragopan, of which two occur in the Himalayas.

The western horned-pheasant (*Tragopan melanocephalus*) is found west of Garhwal.

The crimson horned-pheasant (*T. satyra*) extends from Garhwal to Darjeeling.

The grey-bellied species (*T. blythi*) inhabits Assam.

The hens of all three species are very similar; they are brown birds, mottled, banded, barred and lined with buff and black.

The cock western horned-pheasant has the top of the head black, the crest being tipped with red; the nape and neck are brilliant red; the breast is black with white spots. The upper plumage is black with white ocelli or "eyes" like those on a peacock's feather, and buff wavy lines. The bird is twenty-eight inches in length, of which about ten are composed of tail. The cock crimson horned-pheasant has the head and throat black. The wings are black with white "eyes" and reddish wavy lines; the tail is the same without ocelli. The remainder of the plumage is crimson. As the name indicates, the cock of the grey-bellied horned pheasant has a grey abdomen. This, together with a black gorget separating the yellow throat from the red breast, serves to distinguish him from the other two species.

Tragopans are shy birds which live in forests at elevations over 5,000 feet. The call of the cock is described as a bleat.

The blood pheasant (*Ithagenes cruentus*) is a curious short-tailed little pheasant about eighteen inches long. It lives in the pine forests of Nepal, Sikkim and Bhutan. Both sexes have a short bushy cockatoo-like crest, which, however, does not fold up. The prevailing hue of the cock is grey. The throat, chin, lower cheeks and a patch under the tail are crimson. The breast is pale green with some crimson spots on it.

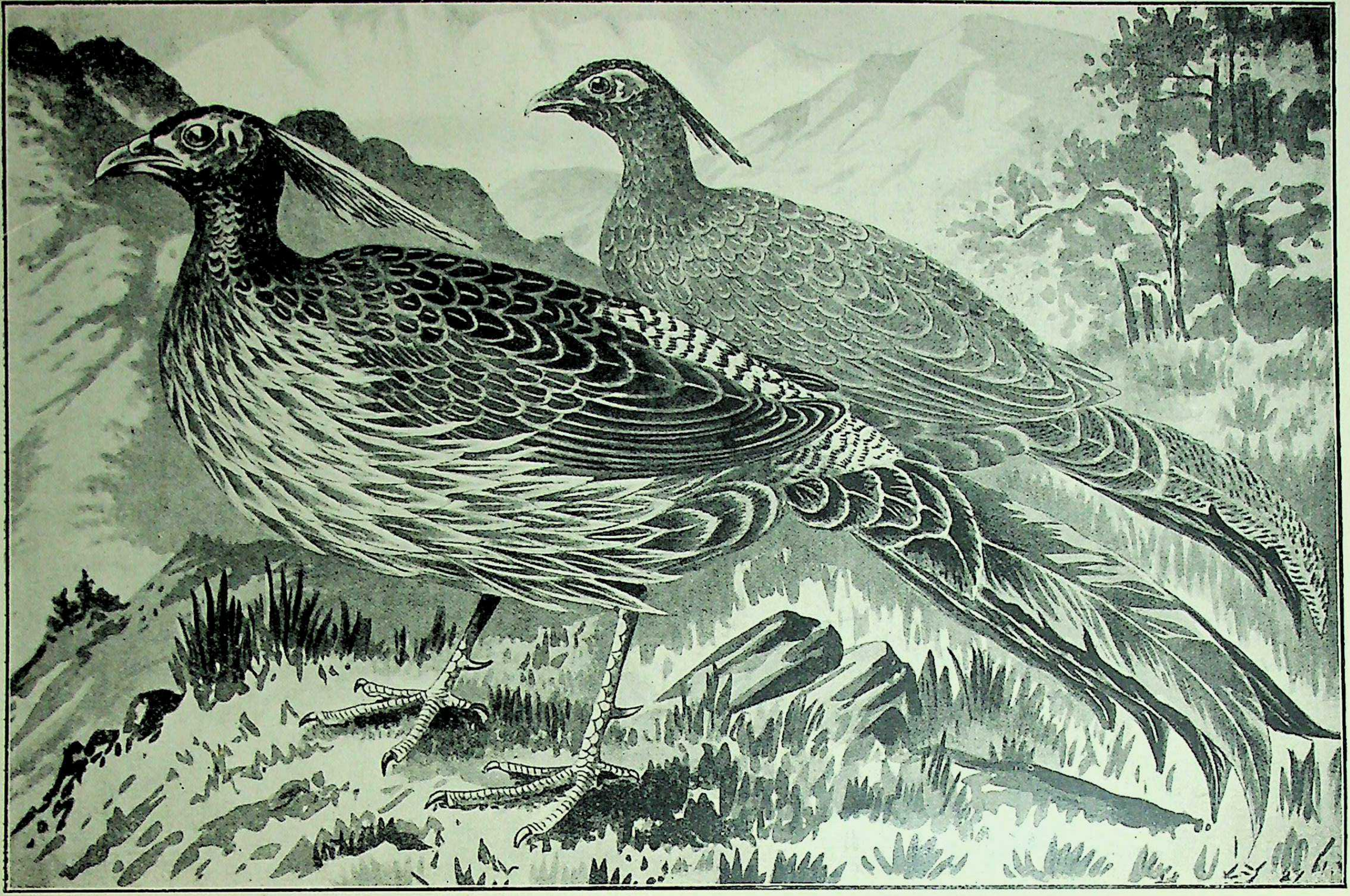
The hen is a brown bird with black wavy lines. Her head is grey and her throat chestnut. The legs of both sexes are bright red.

Although the kalij is the pheasant with which sportsmen in India are most familiar, I have left it to the last because its distribution is so extensive that it is quite as much a Burmese bird as a Himalayan one.

Finn describes kalij pheasants as "narrow-crested, fowl-tailed, red-faced, black-and-white hill pheasants." This is not abuse, but succinct description. The adjective, fowl-tailed, is particularly appropriate; the sportsman unacquainted with the bird is apt to think, when he examines his first victim, that he had shot a kind of junglefowl.

There are many species and varieties of kalij. Five well-defined forms occur within the limits of the Indian Empire. These are—

The white-crested or common kalij (*Gennaeus albicristatus*).



GENNAEUS ALBICRISTATUS. THE WHITE-CRESTED KALIJ PHEASANT. 1/3 Natural Size.

The black-crested or Nepal kalij (*G. leucomelanus*).
The black-backed or Sikkim kalij (*G. melanonotus*).
The black-breasted or Assam kalij (*G. horsfieldi*).
The lineated kalij or Burmese silver-pheasant (*G. lineatus*).

Here we have a good example of how new species arise; kalij pheasants are not migratory, they have a long narrow range over hilly country. As often happens under such circumstances, the original species breaks up into several, each inhabiting a separate area. At the places where the various species meet, they frequently interbreed and in such localities we find birds which do not fit in to any one species, being hybrids.

It is quite easy to recognise a kalij pheasant, and, as each species inhabits an area different from all of the other species, the sportsman who shoots a bird will find no difficulty in assigning it to the proper species. The slender crest, the red patch of skin on the face and the fowl-like tail are characteristic features of both cocks and hens.

All that is necessary is for me to describe one species in some detail and then notice the distinguishing marks of the others.

The common or white-crested kalij pheasant is the bird found in the Siwaliks and Western Himalayas. The cock has a white crest. The remainder of his plumage is dull slaty blue, tinted with red on the shoulders and barred with black on the lower back; the lower parts are dirty white; the legs are white, tinged with blue. There is a red patch of skin round the eyes, which sometimes forms a lappet. The cock is two feet in length, half of which is composed of tail. The hen is a brown bird. Her crest is brown. She has, however, the red patches on the face and her outer tail feathers are blue-black. She is slightly smaller than the cock. These pheasants occur in the Himalayas and foot hills; their range appears to be from about 1,500 to 9,000 feet. They live in the forest, like all other pheasants, but come out in the open to feed. When disturbed in the open they prefer to run to cover to flying. They occur in couples or small parties. The call is difficult to describe. Blanford speaks of it as a whistling chuckle and I cannot better the description. The breeding season begins in April and goes on till the rains. A hole is scraped in the ground in the forest, and from six to twelve eggs are laid; more often than not the nest has no lining. As the name indicates, the crest of the Nepal kalij is black in the cock; this and the fact that the white bars on the lower back are narrower serve to differentiate him from the white-crested form. There is no difference between the hens of the two species. The Sikkim kalij cock has the crest black and lacks the white markings on the back, hence the name, black-backed. The hen is very like those of the common and black-crested species.

The cock kalij, of the species found in Assam, has the breast black instead of soiled white, hence the name black-breasted. The white markings on the back reappear. In the Burmese variety, the whole back is finely pencilled with wavy white lines which give it a silvery appearance. For this reason it is called the silver pheasant. Where this and the previously-named species meet the cocks often have some pencillings on the back and so are intermediate between the two; in consequence some systematists constitute these forms a separate species. In China there is more white than black on the back, and this species is called the Chinese silver-pheasant.

The hens of the Chinese silver-pheasants are distinguishable from the hens of the other species by having V-shaped marks on the back.

NON-HIMALAYAN PHEASANTS.

So much then for the Himalayan pheasants. Of the non-Himalayan species three have already been described—the grey-bellied horned-pheasant, the Assam kalij and the Burmese silver-pheasant. There remain five more:

The argus pheasant (*Argusianas argus*).
The peacock pheasant (*Polyplectrum chinquis*).
Mrs. Hume's pheasant (*Phasianus humiae*).
Stone's pheasant (*P. elegans*).
Vieillot's fire-backed pheasant (*Lophura rufa*).

The argus pheasant is the giant of the tribe, the cock attains a length of six feet and carries a four-foot tail. The hen is a pigmy beside her mate, being barely thirty inches in length.

This fine bird is an inhabitant of the Malay peninsula, but, as it extends to the south of Tenasserim, it is numbered among the birds of India. The black head is as bare as a vulture's, save for a small hairy crest. The upper plumage is brown with ocelli, some of which have the appearance of a ball in a socket. The lower parts are reddish brown and the legs are red.

The peacock pheasant ranges from Sikkim to Siam. The cock is about two feet long with a one-foot tail; the hen is smaller. The cock has a crest or corona. His plumage is speckled grey with violet-green ocelli. The throat is white. In the hen ocelli are replaced by dark brown patches glossed with green and violet. The call of this bird is something between a bark and a cackle.

Mrs. Hume's and Stone's pheasants are more nearly related to the English pheasant than are any other of our Indian phasianidæ. Both have a patch of bare skin round the eye. There is no crest, but the males have a pair of ear tufts. The cock of Mrs. Hume's species is a very showy bird. The upper back, wings and lower parts are copper, glossed with red and set off by patches of blue and red; the neck and throat are black; the lower back and rump are black with a purple gloss; the tail is grey with chestnut bars. The hen is a grey brown bird with chestnut and white in the tail. This species is found in Upper Burma.

Stone's pheasant is very like the English pheasant in appearance. Further description is rendered superfluous by the fact that this bird is found only on the extreme North-East border of the Indian Empire and not one Anglo-Indian in ten thousand is likely to set eyes on it.

Vieillot's fire-backed pheasant need not detain us long, as the only part of the Indian Empire in which it occurs is South Tenasserim. Both sexes have a large hairy crest. The cock, which is a little more than two feet in length, is a beautiful metallic violet bird with the lower back fiery red. The hen is of chestnut hue.

The above account may appear rather formidable to sportsmen. In actual practice the identification of a species of pheasant is a comparatively easy matter, because in no one locality are more than five species found and some of these are birds of high and others of low elevation. Below follow lists of the pheasants to be looked for in each of the following localities—Western Himalayas, Nepal, Sikkim and Bhutan, Assam, Burma and Tenasserim.

WESTERN HIMALAYAS.

Cheer (above 4,000 feet).
Koklas (above 4,000 feet).
Monal (high elevations).
Western horned-pheasant (high elevations).
White-crested kalij (low elevations).

NEPAL.

Cheer (above 4,000 feet).
Koklas (above 4,000 feet).
Monal (high elevations).
Crimson horned-pheasant (high elevations).
Blood pheasant (high elevations).
Black-crested kalij (low elevations).

SIKKIM AND BHUTAN.

Monal.
Crimson horned-pheasant.
Blood pheasant.
Black-backed kalij.

ASSAM.

Grey-bellied horned-pheasant.
Black-backed kalij.
Grey peacock pheasant.

BURMA.

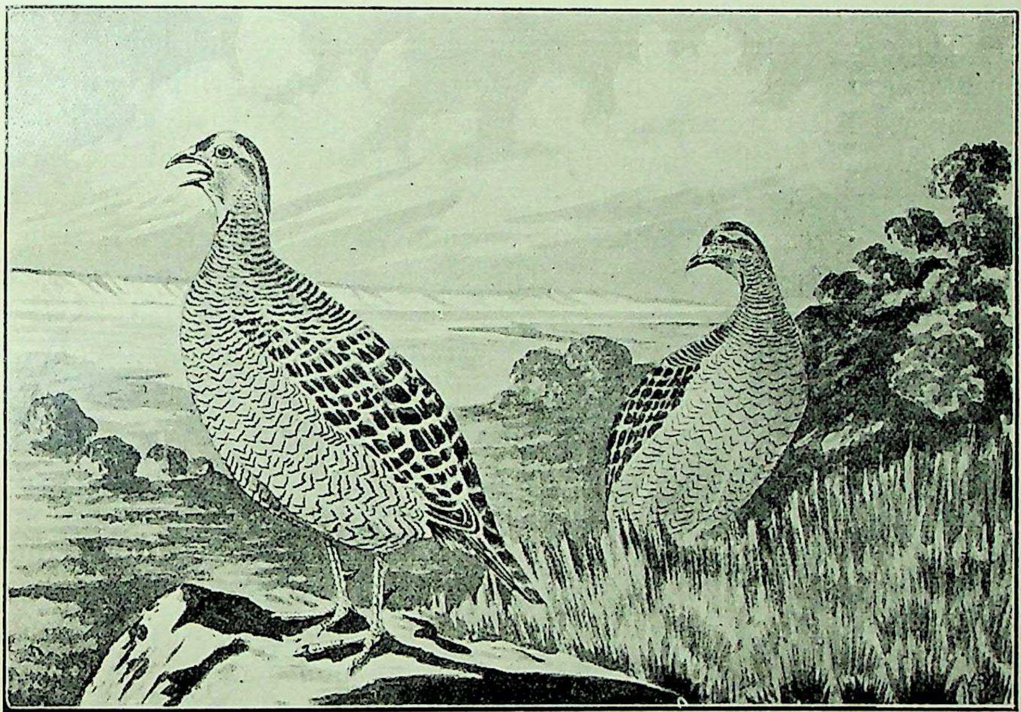
Burmese silver-pheasant.
Peacock pheasant.
Mrs. Hume's pheasant.
Stone's pheasant (North-East border of Burma).

TENASSERIM.

Argus pheasant.
Vieillot's fire-backed pheasant.

PARTRIDGES.

My friend, Frank Finn, whose books deserve a far wider circulation than they enjoy, defines a partridge as any short-tailed game bird with a wing over five inches long; game birds with shorter wings are ranked with the quails. This is an excellent definition, if the word "game" be given the restricted meaning it has in the English game laws and be confined to non-aquatic sporting birds.



GREY PATRIDGES (FRANCOLINUS PONDICERIANUS). ¼ Natural Size.

The grey partridge (*Francolinus pondicerianus*) is the commonest and most widely distributed partridge in India. It is found everywhere at elevations under 1,500 feet, except in dense forests, the west coast of India south of Bombay, Lower Bengal, Assam and Burma. If Calcutta people wish to see this species in a state of nature, they must take a trip to some place west of Midnapur.

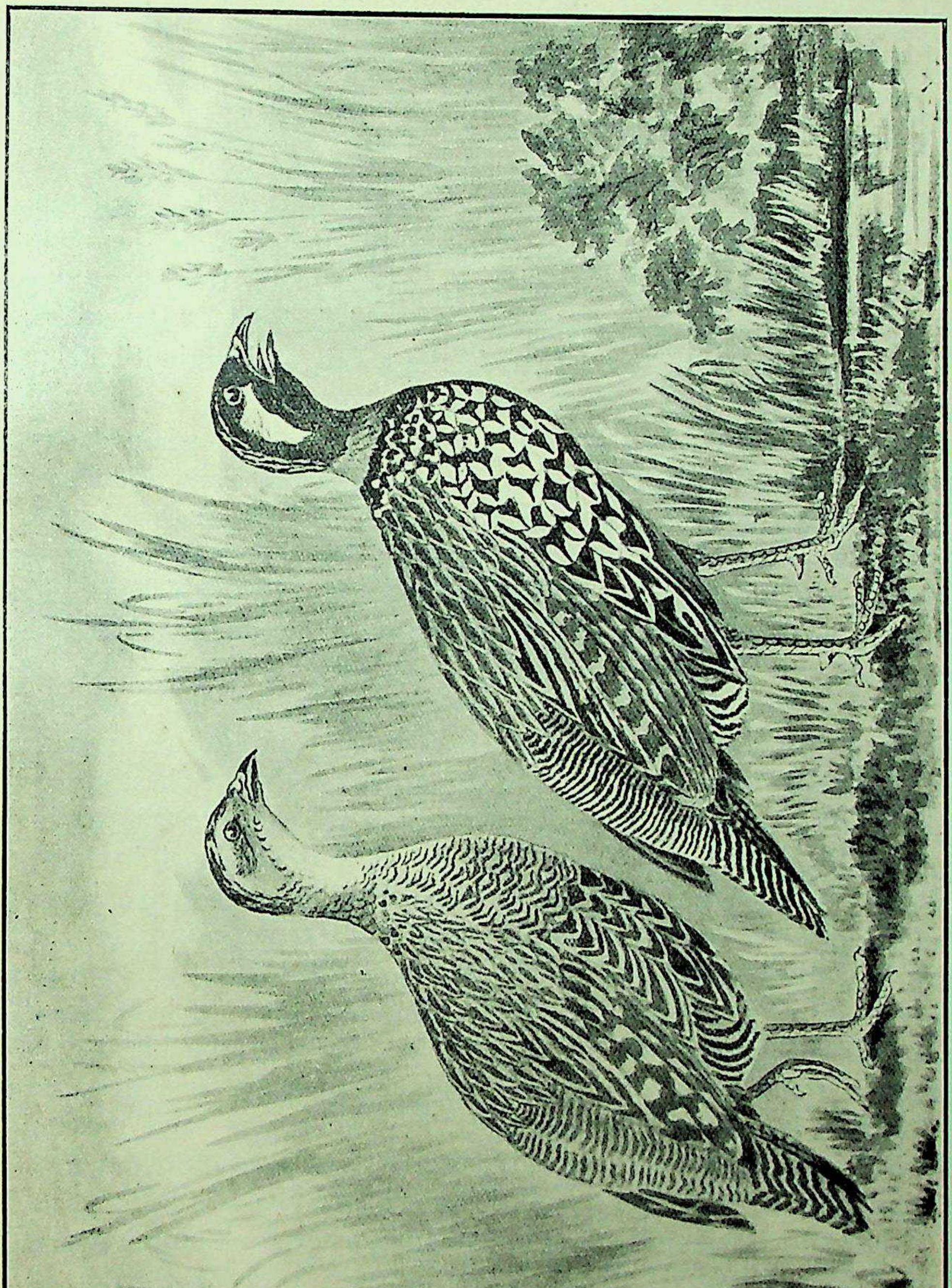
The cock is very pugnacious and on this account is a favourite cage bird in northern India. Go where you will in the United Provinces and the Punjab, you will see in the mornings and evenings tame partridges following their master after the manner of dogs. As Lockwood Kipling well says, "the creature follows its master with a rapid and pretty gait that suggests a graceful girl tripping along with a full skirt well held up."

Save for the red legs the attire of the grey partridge is sober enough to satisfy the most exacting quaker. Except in the aforesaid legs the bird displays no bright colour; the upper plumage is brown with a very large number of short, narrow, cream-coloured cross-bars, each having dark edges. The throat is buff, separated by a not very well-defined black band from the lower parts, the buff of which is marked by dark transverse pencillings. The outer tail feathers are dull chestnut. The cock is provided with offensive weapons in the form of a spur on each leg, which serve to differentiate him from the hen. The grey partridge has a loud and cheerful penetrating note, which the Indian name *titar* is doubtless intended to imitate. Hume syllabises the call *Ka, ka, kateetur, kateetur*.

The grey partridge affects open and dry country, and, being a fast sprinter, runs to cover whenever alarmed. It does not willingly take to its wings. After it has sought cover it is difficult to dislodge. Sometimes half a dozen brickbats hurled into a tiny thicket containing three or four partridges fails to evict them. He who shoots grey partridges will find a dog very useful. It is usually said that grey partridge shooting affords but poor sport. This is true; but the reason is not that the bird is easy to shoot but that a big bag is seldom secured, because the birds are usually scattered; each patch of bush jungle, if it contain any, will hold probably only a pair and so the sportsman has to work hard for his birds. Thus it happens that grey partridge shooting is usually combined with quail shooting.

And, after all the labour that has been expended in securing him, the grey partridge does not provide a very dainty dish. Like other partridges, it feeds on seeds and insects. It is said to be not too particular as to its diet, but of this I have no proof. Most pairs breed from February to May, but eggs are often found between September and November. The nest is almost invariably on the ground, usually beside a prickly pear or other bush or a tuft of grass; it is a slight hollow, often lined with grass. Seven or eight white eggs are laid.

The cock black partridge (*Francolinus vulgaris*) is the most handsome of the Indian partridges. He is not a black bird, and is called black because there is much black in his plumage, a rather unusual feature in the partridge clan. The crown of the head is streaked with light and dark brown, the feathers of the shoulders and wings are brown with buff edges, and, in the case of the wing quills, the brown is barred with buff throughout the feather. There is a chestnut collar round the neck and a chestnut patch under the tail. This chestnut collar is the feature which distinguishes this from the allied species of Francolins. The lower parts are pale chestnut marked with white; the rest of the plumage is black, heavily streaked, spotted and barred with white. There is a white stripe on each side of the face, large white



BLACK PARTRIDGE (FRANCOLINUS VULGARIS). 1/3 Natural Size.

spots on the flanks, and numerous small white cross-bars on the lower back and tail; the legs are salmon coloured. In the hen the chestnut collar is reduced to patch on the back of the neck. This chestnut patch serves to differentiate her from her lady cousins. The bars on the back and tail are brown and buff, and the sides of the head are brown and buff instead of black and buff. The black partridge is found over the whole of India, north of the latitude of Gwalior. South of Gwalior it is replaced by the painted partridge, and in Burma by the Eastern or Chinese Francolin.

The cock black partridge has a very curious call, heard mostly morning and evening. So high-pitched is this as to be beyond the range of hearing of some people ! It may be syllabised as *Juk-juk-tee-tee-tur*. Some people declare that the bird shrieks " Be quick and pay off your debts." This, I fear, is the result of imagination due to guilty conscience !

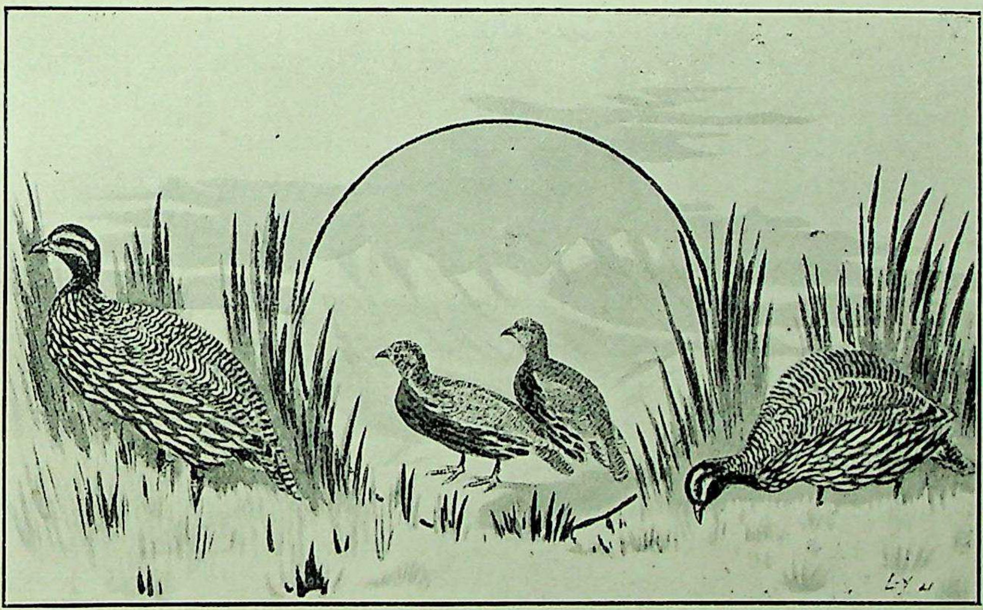
Unlike the grey partridge, this species ascends the Himalayas, as high as most hill stations. Its favourite haunt is long grass and tamarisk scrub situated between water and cultivation. It is an excellent table bird. Young black partridges, when they first emerge from the egg, are covered with a pale yellow down like that on baby chickens. They are very lively and run and jump well and emit unceasingly a shrill whistle.

The painted partridge (*Francolinus pictus*) is the South Indian counterpart of the black partridge. The males of the two species are not unlike in appearance. That of this species lacks the chestnut collar, and the throat and face are chestnut; the white spots on the lower plumage are so numerous as to leave but little of the black background visible. The hen resembles the cock except that her throat is nearly white, and the bars on the back are buff and farther apart than in the cock. Detailed description is unnecessary. The habitat will enable the sportsman to know to which species a bird he has shot belongs. The habits of the painted partridge resemble those of the black species, except that the former is more often found at a distance from water. The call is less harsh than that of the *kala titar* and resembles *Chee-kec-kerai*. The cock of this species does not possess spurs. In this he differs from the grey and the black partridges.

I have no first-hand knowledge of the Eastern or Chinese Francolin (*Francolinus chinensis*). I regret to have to observe that it is no uncommon thing for ornithologists to discourse on birds of which they have no personal knowledge! Such worthies either plagiarise or quote with acknowledgments. I follow the latter course and take the following from Finn's *Game Birds of India and Asia*, a little book which I commend to all sportsmen.

" The Chinese Francolin is intermediate in size between the black, and the painted Francolins; the sexes differ in colour nearly as conspicuously as those of the black species and the male alone possess spurs. His general colour is black spotted with white, the spots becoming broad bars on the belly. The top of the head is brown with pale edges, and black forehead and eyebrows; there is another black band from the corner of the mouth to below the ears, and between this and the eyebrow a white streak covers the side of the face, the throat being also white. The lower back is black with close narrow white bars; under the tail is a chestnut patch, and the shoulder feathers and innermost wing-quills are edged with chestnut and have the spots buff.

The hen is brown above, with a pale mottling; the lower back is barred with buff and brown; the chin and throat are dirty white and the under parts below this buff barred with dark brown, and plain chestnut under the tail. On the head the eyebrows and cheek stripes are brown and the light band buff. The head is dark above, eyes are light hazel, and legs orange." I defy the bird to hide its identity from anyone armed with the above description!



Snow-Partridges (Lerwa nivicola) in circle. 1/15 Natural Size. Swamp Partridges or Kyah (Francolinus gularis) at sides. 1/7 Natural Size.

Of the swamp partridge or *kyah* (*Francolinus gularis*) I have first hand knowledge, having spent some happy days in the Pilibhit tarai on elephants shooting him and florikin, to say nothing of swamp deer.

This fine large bird approaches the grey partridge in appearance more nearly than do the other francolins that I have described. The sexes are alike, save that the hen has no spurs. The upper plumage is brown, barred with buff. The throat is bright rusty red, the rest of the lower parts are brown with longitudinal white streaks; the legs are dull red.

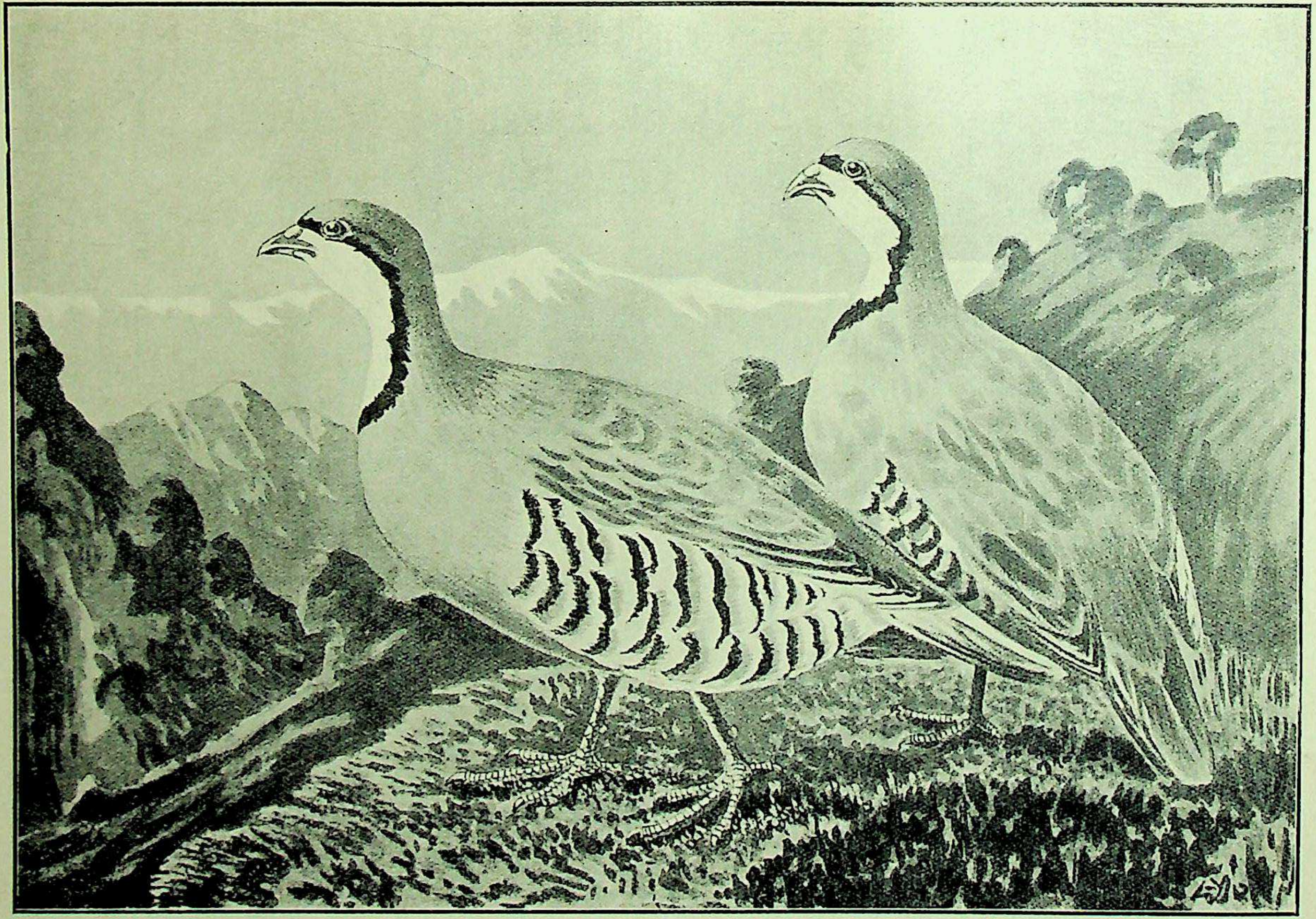
This bird occurs in the region watered by the Brahmaputra and in the Himalayan tarai. Blanford states that it occurs in the alluvial plains of the Ganges. It may do so, but I have never come across it there. My experience is that it usually occurs on swampy ground which is densely covered with very long grass, but I have flushed it from dry ground covered with shorter grass. Its call is a harsh *kar kar kia.* In the stomach of one of that I opened I found seeds of tall grass and a large beetle. This bird is always called the *kaker* by natives of the United Provinces.

So much for the partridges which are likely to be seen on the plains of India. There is a bird called the chestnut or ferruginous wood-partridge (Caloperdix *oculea*) found in the Malay Peninsula. This, as the name implies, is a reddish partridge and as such is easily identified. No further description is necessary.

We have now to deal with the hill partridges. There are many of these, but perhaps only one—the chakor—is really entitled to a place among the common birds of India.

Before describing him let me say a few words about the pretty little seesee (*Ammonperdix bonhami*), the smallest member of the family. This is ten inches long, as opposed to the twelve-and-a-half of the grey partridge. It has a better title than the last to the name grey. If you would see this bird in a state of nature, you must repair to the salt range in the Punjab, or to the hills round about the Indus. The prevailing hue of the plumage is sandy grey, with numbers of fine buff bars. The cock has a black eyebrow with a white band below it, which the hen lacks. The bill is orange and the legs yellow. Further description is unnecessary. The small size of the bird and its limited distribution will at once enable the sportsman to recognise it.

The chakor (*Caccabis chukar*) is not unlike the French partridge in appearance. The cock and hen are alike save that the former has blunt spurs. The upper plumage is grey, washed with red or greenish brown in parts. A conspicuous black band runs across the forehead to each eye, and is continued round the creamy white throat as a gorget. The lower parts are buff; the feathers on the sides of the body are barred with chestnut, black and buff. These conspicuous barred feathers together with the black band described above and the red bill and legs, render it easy to distinguish the chakor at a glance from all other Indian partridges. The chakor is a denizen of the Himalayas and the mountains of the Punjab. It is not found east of Nepal. It haunts hill sides on which there are not many trees. It lives in small coveys. These give the man who goes out to shoot them a practical demonstration of the fact that any two sides of a triangle are longer than the



Chakor (Caccabis chukar). 1/3 Natural Size.

third. Chakor shooting, in my opinion, is sport only for the young and active. You arise at dawn and proceed to the place where some coveys have been marked down. Your *shikari* points to a place 500 feet above you. You scramble up as best you can, and when you are negotiating a terrace with the gun at safety the covey get up and fly across the valley to the opposite hill. This journey is performed in 40 seconds by the birds. The *shikari* points to where the covey has settled and says "*Wo baitha*!" Thereupon you proceed to decend the hill side up which you have just climbed and then ascend the other. This operation takes you at least 40 minutes. This time, if you are lucky, you bag a bird. If hard work be the essence of good sport, then chakor shooting is the quintessence thereof.

Those who are not fond of systematic ornithology are advised to stop reading here. Readers who fail to follow this advice are requested not to abuse the writer. He is doing his best !

There are many species of partridges that live among the Indian hills. Most of them are birds of high altitudes. If you are fortunate enough to shoot one of these, and are desirous of finding out to what species it belongs, your best plan is to take the bird by the tail as Moses of old did to the serpent ! Having done this, count the number of feathers in that appendage.

If the number be 16 or 18, the bird is the Tibetan partridge (*Perdix hodgseniae*). If there be 20 or 22 tail feathers, the bird is a snow-cock. Snow-cocks are much larger than ordinary partridges. If the bird be more than two feet long, it is the Himalayan snow-cock (*Tetraogallus himalayensis*) ; if it be less than two feet in length, it is the Tibetan snow-cock (*T. tibetanus*).

If the tail have 14 feathers, it may be a snow-partridge, one of the Francolins, the chakor or one of the hill-partridges.

The chakor and the Francolins have already been described.

The snow-partridge (*Lerwa nivicola*) is a ptarmigan-like bird, of which the head and all the body plumage are closely barred with black and cream. During flight the wings show some white. The bill and legs are bright vermilion. Another feature of this species is that the front of the leg is feathered half way down.

If the bird is not one of the above, then it must be one of the seven species of hill-partridge found in India.

Now, I am here confronted with two difficulties. The first is to describe hill-partridges in general so as to enable the reader to tell any of them from all other kinds of partridges, and the second is to state briefly how a man can tell each species from the other six. The difficulties are not lessened by the fact that I have but a bowing acquaintance with hill-partridges owing to the fact that the benign Government in his, their, its or her wisdom (You apply the possessive pronoun, O reader, according as you regard the Government as a man, a corporation, a machine, or an old woman !) has come to the conclusion that the climate of the plains is best suited to my health.

Hill-partridges are of the same size as the grey partridge. They have no spurs. The tail is short even for that of a partridge. The front toes are provided wth rather long claws. The best distinguishing feature of the hill partridge is a ring of bare skin round the eye. This is usually bright red. The only other partridges that have bare skin near the eye are the snow-cocks and the Tibetan partridge. These are found at considerably higher elevations than hill partridges; moreover, in the snow-cocks the patch of bare skin is a strip and is behind the eye; then there is the difference in the number of tail feathers. The hill-partridges are the only fourteen-tail-feathered partridges that have a ring of bare skin round the eye.

The species most likely to be seen in the Himalayas is the common or black-throated hill-partridge (*Arboricola torqueola*).

The male has the head chestnut red, set off by the already-mentioned red patch of bare skin, a black eyebrow and a white moustache. The sides of the head and the throat are black, bordered with white. The back is greenish brown, barred with black. The breast is grey, the flank feathers having conspicuous chestnut borders.

In the female and the younger males the orbital skin is bluish red. The head of the hen is brown, spotted with black, the sides of the head and throat are reddish brown. There is a reddish gorget separating the throat from the brown breast. This is the only species of hill-partridge in which the sexes differ in appearance. So far as I know there is nothing peculiar in the habits of this particular species to explain the sexual dimorphism. In my opinion, most biologists see far more significance in sexual dissimilarity than such difference possesses.

Hill-partridges affect thick undergrowth, usually in the vicinity of streams. When flushed, they generally fly only a short distance and so are not easy birds to shoot. Their call is a soft, low whistle. My friend, Mr. Pratt, thus describes the call of the common hill-partridge. "A long low whistle, with what appears to be a reply—a crescendo note, rather like a subdued call of a brain-fever bird. The call is, I believe, only heard in spring." Hume says that it is so like the whistle with which the shepherds call their flocks, that in some places the hill-men believe that these partridges are the abodes of the souls of former shepherds, and in consequence object to their being shot.

So much for hill-partridges in general and the common species in particular. There are six other species and it remains for me to try to enable the reader to distinguish between them. Of the seven hill-partridges, three are confined to Burma, three to India, and one is common to both countries. Thus a partridge shot in either Burma or India can be only one of four species.

The three kinds confined to Burma are:

1. The green-legged hill-partridge (*Tropicoperdix chloropus*). This is easily distinguished from the other three by its legs being green instead of red. The orbital skin is purple.

2. The Arrakan hill-partridge (*Arboricola intermedia*). This has the chin and throat black, the gorget red and breast grey.

3. The brown-breasted hill-partridge (*A brunneipectus*).

This has the throat thinly clad with buff feathers tipped with black; so scanty are these feathers that the skin shows between them and makes the bird appear to be moulting. The breast is pale brown.

The partridge common to both India and Burma is Blyth's hill-partridge (*A. rufigularis*). This has the breast grey, the flank feathers having chestnut borders. The feathers of the throat are reddish fawn with black spots. Between the throat and the breast is a reddish band. The crown is greenish brown with black spots.

The three species confined to India are:

1. The common hill-partridge (*Arboricola torqueola*). Already described.

2. The white-cheeked hill-partridge (*A. atrigularis*). This is readily distinguished by its white cheeks, black chin and throat and grey breast.

3. The red-breasted hill-partridge (*A. mandellii*). This is easily recognised by the chestnut breast, pale throat, white gorget and grey breast.

The common hill-partridge is the only one found in the Western Himalayas.

There are one or two game birds the classification of which has puzzled systematists, since they are neither partridges, quail nor pheasants. As one of these is universally known as the bamboo partridge I had better deal with it here, although this chapter is already overlong.

The bamboo partridge rejoices in the scientific name *Bambusicola fytchii.*

It is found in the forests and long grass of the Assam Hills and further East. Blanford classes the bird among the pheasants. Finn tells us that when a specimen escaped from captivity in England a sporting paper described it as a hybrid between a pheasant and a partridge. Apart from the tail (which is five inches long, the total length of the bird being fourteen), the bird is very partridge-like in appearance. It is partridge-like in colour. The upper parts are brown with chestnut drops. There is a dark band running from the eye down the side of the neck. The chin is buff, the breast chestnut with white spots, the abdomen buff with large black heart-shaped spots. The legs are greenish grey. The sexes are alike in appearance.

QUAILS.

As we have seen, a quail is a short-tailed game bird of which the wing is less than five inches in length, while the partridge is one having a wing longer than five inches. But for the existence of some quails which possess but three toes, it might be said "a quail is a small partridge and a partridge a big quail." However, in nature hard and fast lines are rarely drawn ; there are several birds intermediate between partridges and quails—birds that are too small to be partridges and too large to be quails. One of these—the Bamboo partridge—has been mentioned already. There are three others, and although the average man is not likely ever to set eyes on any of them, I will mention them for the sake of completeness.

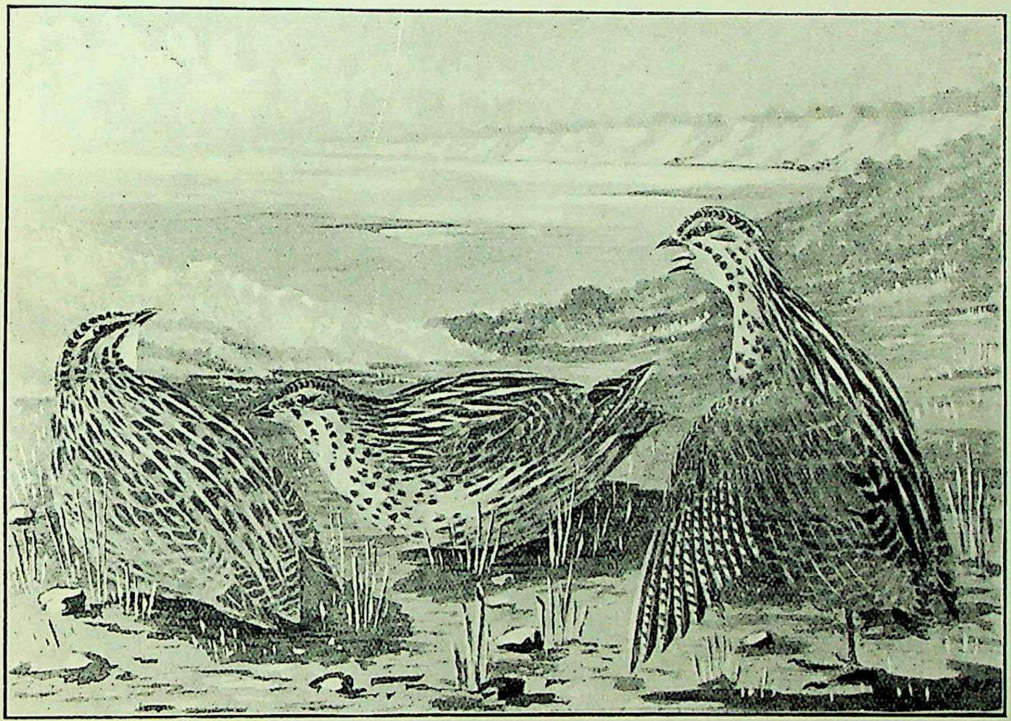
The mountain quail (*Ophrysia superciliosa*) has been shot three times in India in the vicinity of Mussoorie. A grey bird, marked with black and white, after the manner of partridges and quails, about ten inches long, having the bill and feet red, is likely to be this species; anybody shooting such a bird should send the skin to the Bombay Natural History Society for identification. Another of these nondescripts is known as the green wood quail or *Rollulus roulroul*. This is confined to Tenasserim. It is about three inches longer than the common quail. The prevailing hue of the plumage is green. The hen has a grey head; the cock has a reddish crest.

The last of these game birds that defy the classifier is the Nicobar Megapode (*Megapodius nicobarensis*). If you would see this big brown fowl with a patch of red skin round the eye you must betake yourself to the Nicobars.

The group of little birds—all less than eight inches in length—which we call quail—comprises birds having four toes and those with but three toes.

Now, zoologically speaking, there is a wide gulf between a bird that has no hind toe and one that has. In consequence, men of science hold the common quail to be related more closely to the peacock than to the button-quail. The external resemblance between the three and the four-toed quails is due to similarity of habits. It is not an uncommon phenomenon in nature for two forms, that are in no way related, to resemble one another when their habits are similar. The swifts and swallows afford an example. Many so-called cases of mimicry are due to similarity of habits. If the common quail were unfit for food for man and beast as the skunk is, while the button-quail were good to eat, zoologists would have asserted that the edible button-quail had mimicked the inedible common quail in order to escape from the creatures that prey upon it. But this is a digression. All that the sportsman needs to remember is that the true quails, like partridges and pheasants, have three toes in front of the foot and one behind, while the bustard and button-quails have only three toes, all forwardly directed. This piece of knowledge will enable any one at once to say to which class a quail held in the hand belongs.

Let us first consider the four-toed quails found in India. Blanford divides these into four genera—*Coturnix*, *Excalfactoria*, *Microperdix* and *Perdicula*.



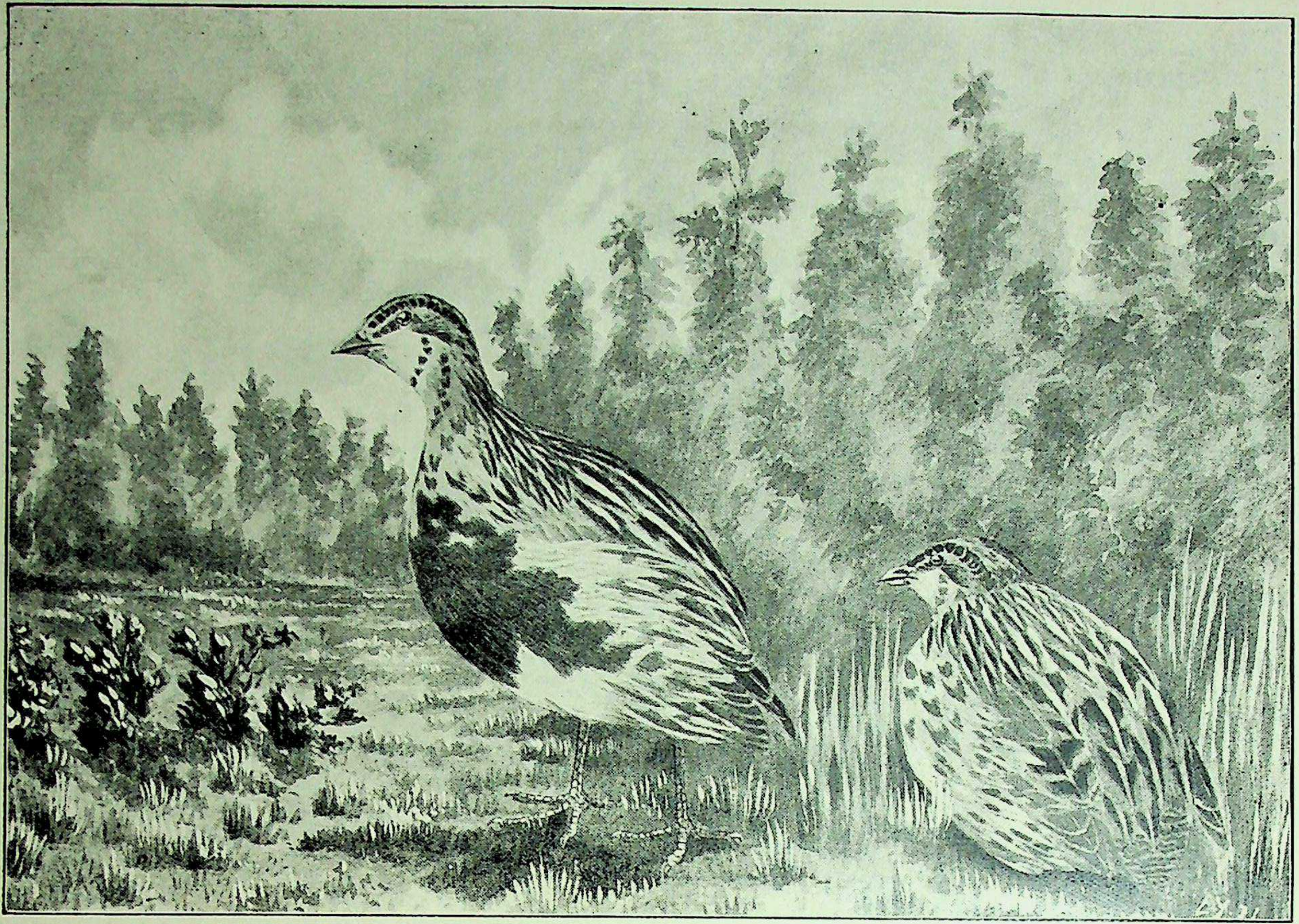
THE COMMON OR GREY (COTURNIX COMMUNIS). 1/3 Natural Size.

The two quails most commonly shot in India belong to the genus Coturnix. They are the grey or common (*C. communis*) and the black-breasted or rain quail (*C. coromandelica*).

Detailed description of so familiar a bird as the grey quail is superfluous. It is some eight inches in length. Its insignificant tail, short wings and plump body are brought out in Mr. Levett-Yeats' drawing.

"Grey" is a misnomer for this species, since the prevailing hue of the plumage is pale brown. The brown is copiously marked with longitudinal streaks of cream colour, reddish cross-bars and dark-brown crescents and blotches.

There is a buff eyebrow and a band of this hue from the forehead to the back of the head. The male has a dark-brown anchor-shaped mark on his throat, which serves to differentiate him from the hen.



THE BLACK-BREASTED OR RAIN QUAIL (COTURNIX COROMANDELICA). ½ Natural Size.

This quail differs from its brethren in that in the spring it leaves India for Tibet, where it breeds. Nests of this species, it is true, have been taken in various parts of India between Satara and Nowshera, but these, I believe, are those of birds that have been injured by some sportsman and so rendered incapable of taking the long migratory flight.

Colonel Marshall gives the following account of a nest of this species found by him at Lahore one April: "The nest was in the corner of a tobacco-field; I saw the parent bird. The nest was only a hollow scraped in the ground, at the root of a tobacco plant, with a few bits of dry grass in it. The eggs were eight in number, and were a dirty yellowish white, covered with small and large dark amber-brown blotches."

Quail pour into India in their millions in September and October and settle down in the autumn crops. As these are reaped the quail move on further south to other crops, thus they spread themselves all over India, but do not go to Ceylon. The quail follow the ripening spring crops on their return journey, and so reach the Himalayas at the end of May. When the greater part of the corn has been cut in any locality, the quail that happen to be tarrying there collect in the remaining standing crops and afford good sport for a few days. This is particularly the case in the Himalayas and in Kashmir. In the last-named locality hundreds sometimes collect in a single field.

Thousands of quail are netted every year in India in the manner to be described later. Were they not prolific birds they would have become extinct in India long ago. As a matter of fact, I have not noticed any diminution in their numbers during the past twenty years. As the normal number of eggs is eight, nearly three-fourths of the quail that visit India might be netted every year without apparently reducing their numbers.

The males are very pugnacious and many are kept by Indians as fighting birds. In a state of nature they seem usually to go about in pairs. They have a peculiar call which sounds like "Dick be quick." They have the typical flight of game birds, in that their short wings move with great rapidity. At the beginning of their flight they rise almost perpendicularly, as if they had to surmount some obstacle. I once kept some in a low hut, having a door about three feet high leading to a wired-in enclosure. This doorway had to be made higher because, when it was opened, the birds inside used to fly out of it into the enclosure and every one hit its head against the top of the doorway, some with such violence that they were stunned.

I am inclined to think that the black-breasted quail is a non-migratory race of the grey quail, rather than a separate species. This, of course, is a matter of opinion, because there is no definition of the term species. Zoologists often differ as to whether a certain form is a variety, a race, a sub-species or a species.

As Romanes has demonstrated, isolation plays an important part in the development of new races and species. We have not yet discovered what it is that causes variations to appear in plants and animals. We know that no two individuals of any species are exactly like one another, and we know that whenever any group of animals is isolated from the rest of its kind it tends to develop along peculiar lines. This is well shown in the case of bulbuls of the genus Molpastes, which do not move from one locality to another. There is a Punjab, a Bengal, a Madras and a Burmese race, all of which are readily distinguishable, except at localities where two races meet. At such places the races, or species as Oates calls them, interbreed freely and produce hybrids which do not fit into the description of any species.

There is a prevailing belief that hybrids, that is to say individuals of which the parents belong to different species, are sterile, and old-fashioned biologists declare that this is a provision of nature to prevent the crossing of species. As a matter of fact, there is no such provision of nature; in most cases where closely allied species interbreed, the offspring are fertile. This explains how isolation assists in the formation of new species. Local varieties, if they have no opportunity of mating with their fellows of another locality, tend to become established. Now let us suppose that many centuries ago the quails of the genus Coturnix were all of the grey kind and all lived in Central Asia and remained there all the year round. Then suddenly the climate changed and the winter became so cold that the quail had to migrate south during the winter in order to find food. When the nesting season came round in the spring the quail returned to Central Asia to nest. Later, some of the quail took to breeding in India. The offspring of these would tend to inherit the non-migratory instinct of their parents, and these would have no opportunity of breeding with the members of the species that returned to Tibet every summer to nest.

If then these non-migratory individuals tended to become smaller because they lived in an enervating climate, and, as often happens, to develop dark plumage, because they dwelt in damp localities, we should have the phenomenon of the origin of a new species. It is thus that I would account for the origin of the black-breasted quail.

This bird is about seven inches in length as against the eight inches of the grey species. The cock has a good deal of black on the face, throat and breast. Further, both he and the hen have lost the buff cross bars on the primaries or larger wing feathers.

As regards habits, apart from migration there is little difference between those of the two species. As it feeds more on insects, the black-breasted form is less addicted than the grey to cultivated fields, and the call of the bird consists of two syllables instead of three.

The black-breasted quail is found in all parts of India except the North-West Frontier Province. It undergoes a certain amount of local migration, leaving the damper parts of the country for Northern India and Upper Burma in the rainy season. The reason for this is probably to be found in the fact that it lays its eggs in hollows of the ground, and, as it breeds in the rains, its nests would be liable to be flooded if they were in localities where the monsoon brings very copious rain. The clutch of eggs sometimes consists of as many as nine eggs. The nest depression is either under a bush or in the open.

As this species, like the pied-crested cuckoo, visits the United Provinces only during the monsoon, it is known there as the rain quail. If call-birds be employed this species affords very fair sport. The *modus operandi* is to place at nightfall some cages containing quail in a field, preferably a sugar-cane field, and leave them there all night. Their calls attract wild birds to the field.

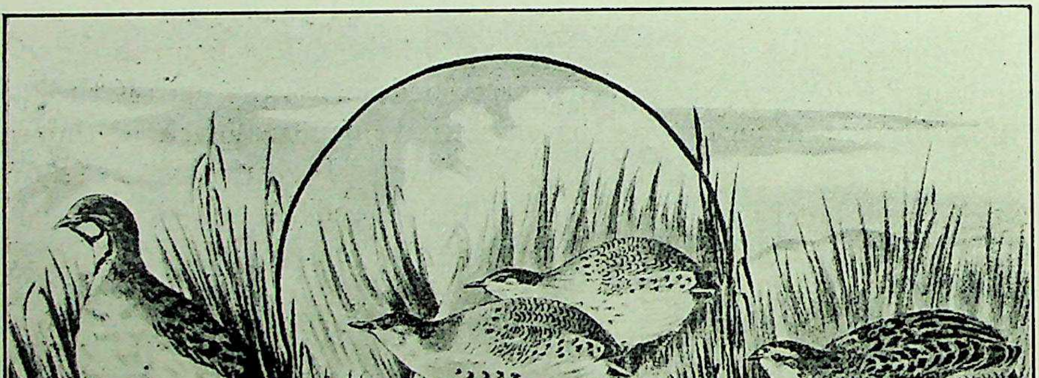
Shortly after dawn men walk through the field in question or a rope is run over the top of the crop. The wild quail run in front of the men or rope till they come to the end of the field when they take to their wings to get caught in a net stretched across the end of the field or to be fired at, according as the object is to capture or shoot them.

There are two species of quail peculiar to India which are known as bush-quail, but I would prefer to call them red-headed quail, because on the head of each sex of each species there is a good deal of red. Their official names are *Perdicula asiatica*, the jungle bush-quail, and *P. argunda*, the rock bush-quail. As the popular name indicates, one species affects well-wooded, and the other open country; the former ascends the hills to elevations of 5,000 feet. As regards shape, these are miniature partridges—smaller even than the grey quail. They are found in small numbers in suitable localities in most parts of India, but I do not regard them as common birds. The red on the head and the short thick bill are their distinguishing characteristics. The jungle bush-quail has the forehead, cheeks and throat bright chestnut. The head is ornamented by a white eyebrow. The cock has the breast heavily barred with black, while the stomacher of the hen is pale russet red. The rock bush-quail is dull brick red where the jungle species is bright chestnut, and it lacks the white eyebrow. The Hindustani name for both species is Lawa.

Bush-quail, like partridges, go about in coveys. When flushed a covey flies in all directions, a scared bird sometimes passing within an inch of the intruder's face! The nesting habits of the red-headed quail are similar to those of the grey quail.

Microperdicula is another genus of quail peculiar to India. Blanford describes three species—*M. erythrorhynchus* or the painted bush-quail, found south of Bombay, *M. blewitti*, Blewitt's bush-quail which occurs in the Central Provinces, and *M. manipurensis* or Hume's bush-quail which is confined to Manipur. These cannot be deemed common birds and undoubtedly form local races of one species, which isolation has permitted to spring into being. As the legs of the central and south Indian forms are bright red and those of the Assam race are orange, I would call them red-legged quails. In the Assam variety the plumage is grey and in the others brown; in all it is heavily blotched with black. The head of the cock is dark red or black-and-white and that of the hen dull red or grey. In size they vary from six-and-a-half to seven-and-a-half inches, Blewitt's being the smallest and Hume's the largest.

There is yet another four-toed quail. This midget is about the size of a sparrow. Its total length is five-and-a-hilf inches, that is to say, an inch less than that of the next smallest four-toed species. By the foot rule you may identify it, bearing in mind that the three-toed little button-quail is equally tiny. This four-toed pigmy is known to men of science as *Excalfactoria chinensis*: sportsmen call it the blue-breasted or painted quail. Like the rain quail, it is a local migrant; it occurs most abundantly in Bengal, but may be found in almost any moist portion of the Indian empire, west of Delhi and north of Bombay.



The Indian Button-Quail (Turnix Tanki) in centre. ¼ Natural Size. Blue breasted Quail (Excalfactoria chinensis) at sides. ¼ Natural Size.

The cock is a handsome little fellow. His upper parts are brown, pencilled with buff and blotched with black. Below the eye on each side is a white triangle margined with black. The upper breast and the sides of the abdomen are blue grey and the remainder of the abdomen is chestnut. The legs are bright yellow. The hen is coloured like the grey quail, but may be readily differentiated by her small size and yellow legs.

This completes the account of the four-toed quails. Of necessity, I have been compelled to inflict a good deal of description on the reader, but I trust that this will enable any one to identify any quail he may shoot. The size and the colour of the head or legs are the features to be examined in any four-toed quail which is not a grey or a rain quail.

The three-toed quails are an interesting family in which the cock does the work usually assigned to the hen; for he alone sits on the eggs and looks after the young birds. He is smaller than the hen, is not so pugnacious and is clad in more homely attire; in short, he is a typical hen-pecked husband. A good deal has yet to be learned of the habits of the three-toed quails and therefore any one who has an opportunity of witnessing the nesting operations of any species should keep a careful record of what he or she sees.

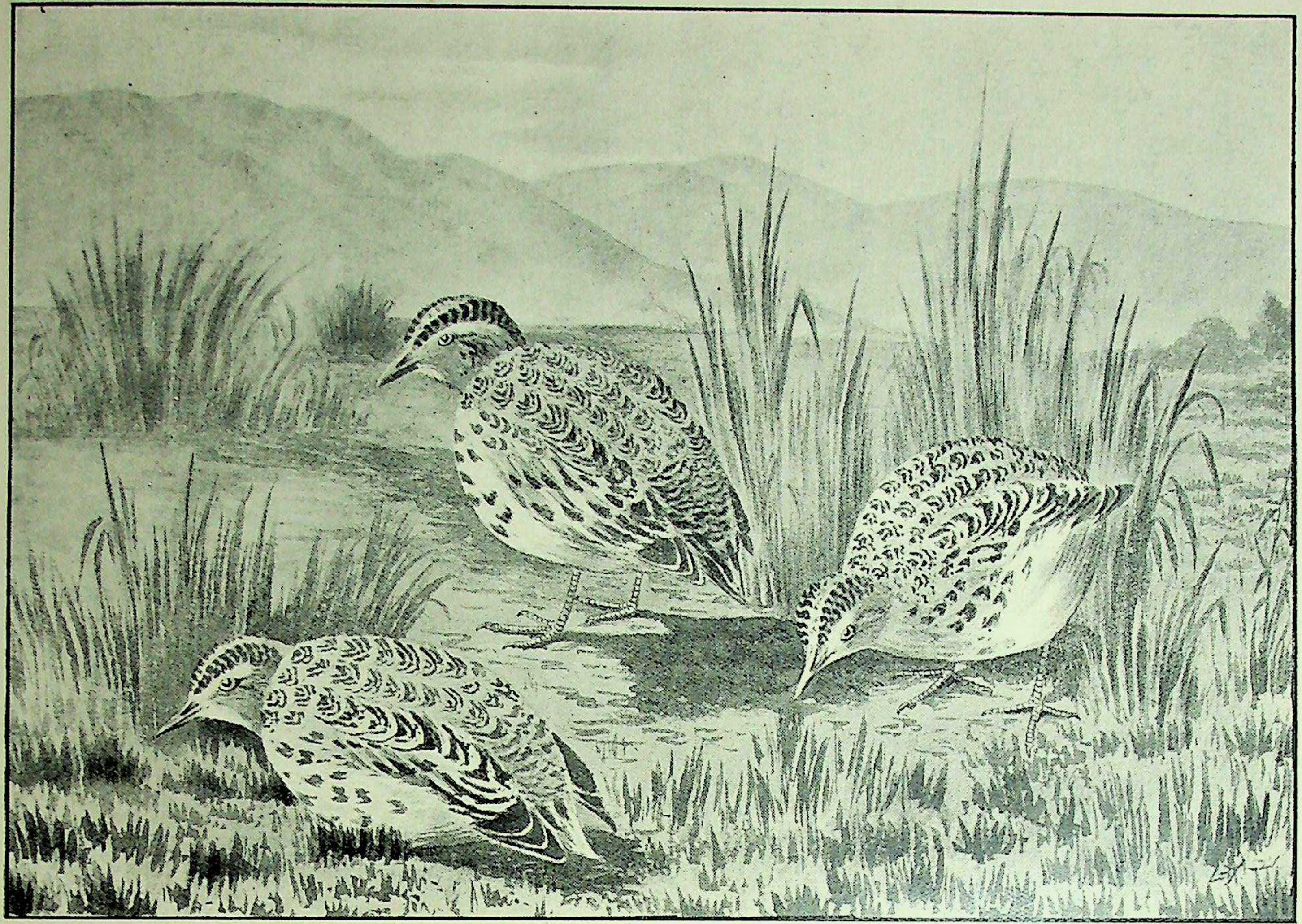
Apart from the assumption by the cock of feminine duties, the habits of these birds are very like those of the true or four-toed quails; they spend their time chiefly in grass or among bushes and feed on the ground. They usually go about in pairs. The nest is a hollow in the ground in which from four to eight eggs are laid.

The three-toed quails belong to the order *Hemipodii* and to the genus *Turnix*.

There are three well-marked species—the bustard quail (*T. pugnax*), the little button-quail (*T. dussumieri*) and the button-quail. The last falls into three races—*T. tanki*, the Indian button-quail which is found in most parts of India Proper, *T. blanfordi*, which occurs in Eastern Assam and Burma, and *T. albiventris*, which is confined to the Andamans and the Nicobars.

All three races of button-quail have the bill and legs yellow (in the Burmese race the whole of the upper and the tip of the lower mandible or chap are brown). The average length of the bird is six-and-a-half inches. The upper plumage is brown, barred with black and pale red. The hen dons a chestnut collar in the breeding season.

The bustard and the little button-quail are widely distributed in India. They may be distinguished from the button-quail by the fact that the bill is slaty blue. They may be distinguished from each other by the fact that the bustard-quail is six-and-a-half or six inches long according as it is a hen or cock, while the hen little button-quail measures five-and-a-half inches and the cock is slightly smaller. The bustard-quail has the breast barred black-and-white. The breast of the little button-quail is buff, with some heart-shaped black or black-and-white spots at the sides.



The little Button Quail (Turrup dussumiere). ½ Natural Size.

BUSTARDS AND FLORICAN.

The plains of the Punjab are about the least attractive part of India to the sportsman and to every one else; they are a dreary desert through which five rivers trickle—a desert which the British are making valiant efforts to reclaim. Only those Europeans who have lived in the Punjab can fully appreciate the lamentation of St. Cloup, Lord Auckland's *chef*, who accompained his master to Ferozepore in the winter of 1838-39 on a visit to Ranjit Singh, the Sikh Ruler. The lament was addressed to Miss Emily Eden: "Si madame est contente, il n'y a rien a dire, et assurement je fais de mon mieux, mais enfin qu'est ce qu'il y a?—pas de legumes, pas de fruit; il ne faut pas tuer un bœuf, a cause de la religion de ces maudits Sikhs: enfin j'ai de la poussière pour sauce. Mon Dieu! quel pays!" St. Cloup was not a sportsman, or he would doubtless have added paucity of game to his list of the shortcomings of the Punjab. Eloquent testimony to the comparative lack of game in that part of the country is evidenced by the fact that Europeans in the Punjab try to spend the Christmas holidays at Lahore, where they amuse themselves with cricket and dancing, whereas in the United Provinces shooting camps are formed in every district.

The arid Punjab, however, has one redeeming feature in the eyes of the sportsman and that is bustards are found there.

Bustards, being birds of the desert, do not occur in Bengal, Assam and other damp parts of India.

" The bustards," writes Dr. Blanford, " appear to be a link between the rails and cranes on one side and the plovers on the other, but are nearest on the whole to the cranes." This is doubtless correct from the scientific point of view, but in appearance bustards resemble plovers rather than cranes.

The most striking external characterstics of bustards are the long, stout, bare legs, the broad flat back, the rather long neck, the small head and big mouth. The bodies of most birds incline upwards when their possessors assume a standing posture, the tail being lower than the breast and pointing towards the ground. In the case of the bustard, however, as shown in the illustration, the body is carried horizontally. This pose of the body (which enables the observer to identify a bustard even from a distance) is, I think, connected with fleetness of foot. Ostriches, wagtails and other birds that use their legs for running, as opposed to hopping, have their bodies set at this angle.

Finn has marked another peculiarity of the bustards, namely, " the way in which they tilt up their bills with an air of supercilious stupidity only equalled by the camel among beasts." Indeed, were you to remove the hind legs of a camel and insert the forelegs in the middle of the abdomen, you would have a tolerable imitation of a bustard. The colouring of the two is not dissimilar: both tone with their drab surroundings.

Needless to say, birds living in such environment are difficult to shoot: they can see the shikari when he is miles away. To secure the larger species you require a rifle or a camel.

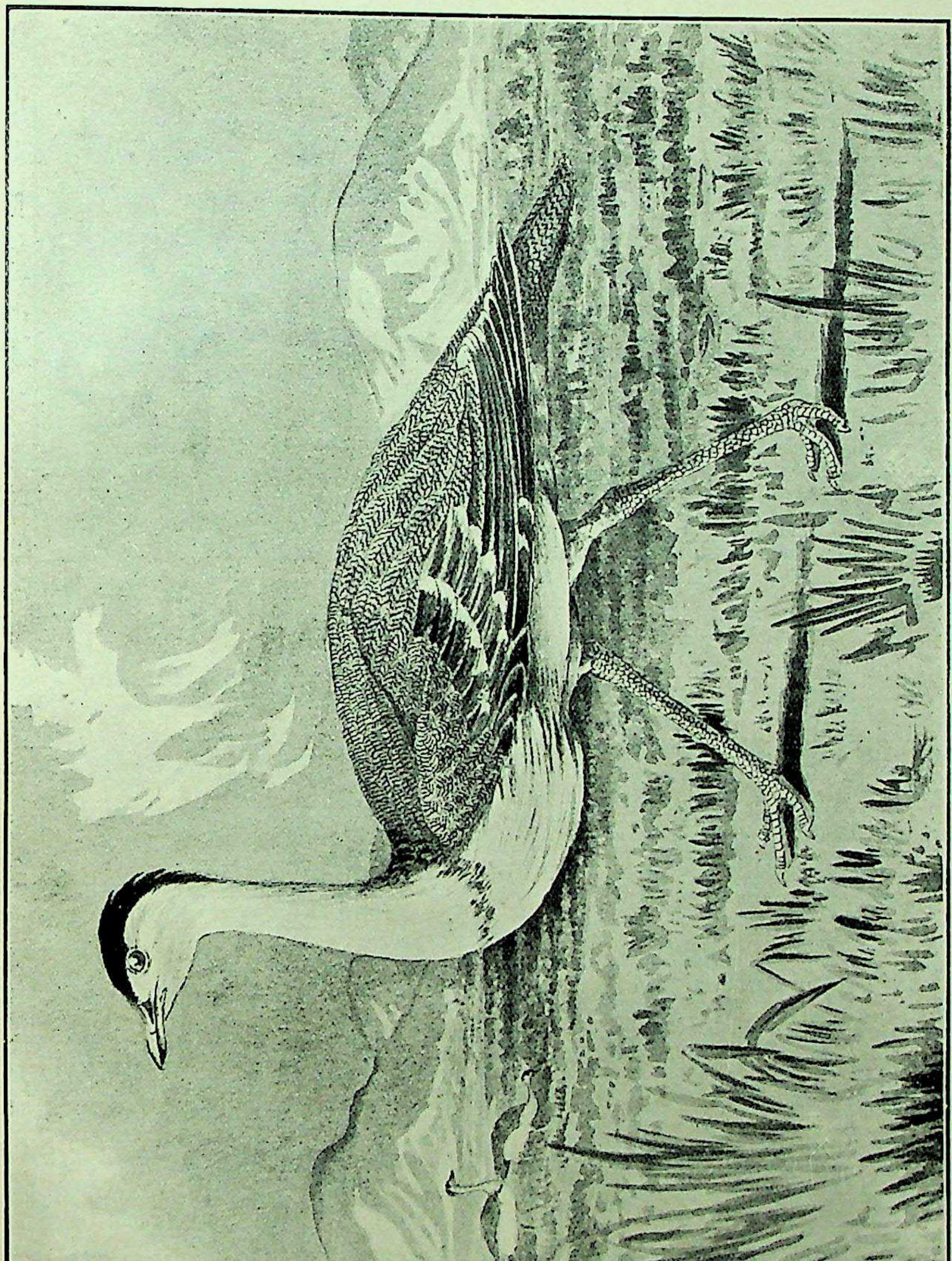
Three bustards commonly occur in the more arid parts of India —the great Indian bustard (*Eupodotis edwardsi*), the houbara (*Houbara macqueeni*) and the little bustard (*Otis tetrax*).

The great Indian bustard is a magnificent bird. The male stands four feet high and the female a little over three feet.

This bustard has a black cap and neck-lace: the latter being incomplete in the hen. The neck and lower parts are whitish: the wings are buff with fine black, wavy pencillings and the legs are dirty yellow. The wings are long. When on the wing this great bird looks like a vulture, but it rarely, if ever, flies high above the ground. It feeds on insects, small reptiles and grain. After midsummer it scrapes out a hollow in the ground as an egg-receptacle for one (sometimes two) large egg, which is usually stone-coloured. Blanford gives the following as the distribution of this bird: " The plains of the Punjab between the Indus and the Jumna, also Eastern Sind, Cutch, Kathiawar, Rajputana, Guzerat, the Bombay Deccan, the greater part of the Central Provinces, extending as far east as Sambalpur, the Hyderabad territories, and parts of the Madras Presidency, and the Mysore State as far south as Southern Mysore and perhaps farther south. Stragglers may be found outside the area specified, as in Western Sind, Meerut and Oudh; but this bustard is unknown in Behar, Chota Nagpur, Orissa, and Bengal, on the Malabar Coast and in Ceylon."

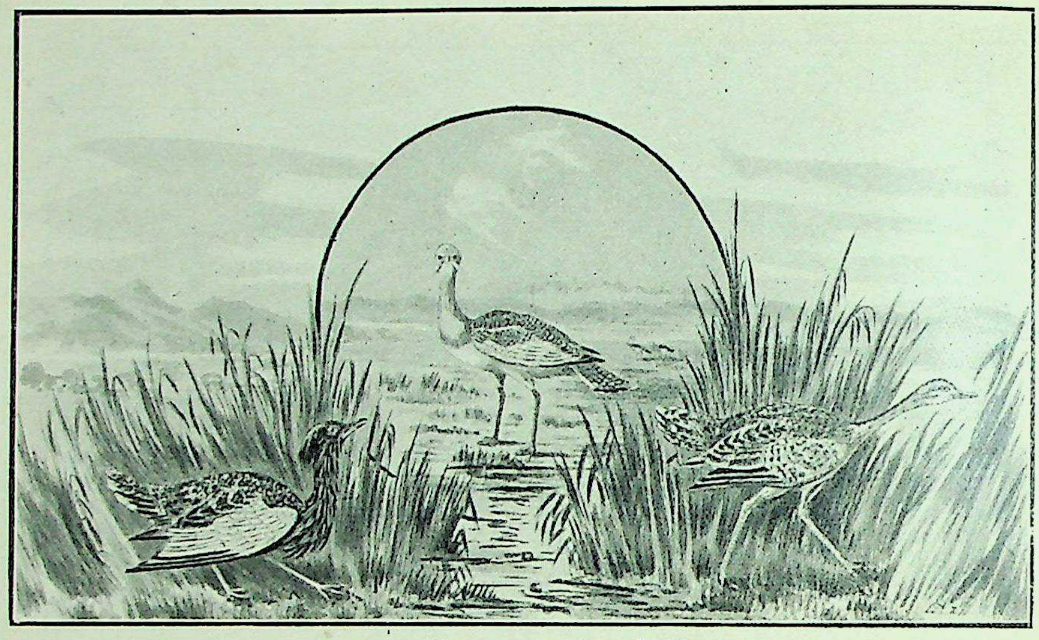
The cock houbara is nearly thirty inches long, the female being three inches shorter. This may be described as a small and ornamental edition of the great bustard. It has a ruff of black and white feathers on each side of the neck and a tuft of rather long feathers hanging from the throat. The upper plumage is buff, finely pencilled with black, and the lower parts are white, flecked with black. This bird is a cold-weather visitor to the Punjab, N.-W. Frontier Province, Sind, Cutch, Rajputana and Northern Guzerat. In March it goes for breeding purposes to Afghanistan and Persia.

The little bustard is a yet smaller edition of the great Indian bustard, being only eighteen inches long. It visits the N.-W. Frontier Province in winter, where it frequents mustard fields. Unlike the other bustards, it flies high and performs aerial gymnastics; in consequence sportsmen call it the " butterfly houbara."



THE GREAT INDIAN BUSTARD (EUPODOTIS EDWARDSI). $\frac{1}{9}$ Natural Size.

Floricans are bustards that dwell in grass. . As grass requires a good deal of moisture, the distribution of floricans necessarily differs from that of the other bustards.



IN CENTRE THE GREAT BUSTARD (OTIS TARDA). $\frac{1}{35}$ Natural Size. AT SIDES THE BENGAL FLORICAN (SYPHEOTIS BENGALENSIS) MALE ON THE LEFT, FEMALE ON THE RIGHT. $\frac{1}{17}$ Natural Size.

The Bengal florican (*Sypheotis Bengalensis*) is the size of a peahen, being twenty-six inches in length.

The hen is coloured like the bustards described above, having the upper plumage buff, pencilled with black, but the lower plumage is cream-coloured rather than white, with some black markings. The legs are dull sullied yellow. The cocks at the breeding season, that is to say from March to July, assume a nuptial plumage, which they are said to lose in the autumn. This may be the case with some birds, but certainly is not universally true. I have shot several cocks in breeding livery at the end of October.

In breeding plumage the cock is, generally speaking, a black bird with white wings. He has a black crest and long black feathers at the throat and neck.

The Bengal florican lives in the Terai and in Assam. A few of those that I have shot in the Pilibhit Terai were flushed from comparatively short grass, but most of them were in grass from six to ten feet high. Thus they are best shot from elephants. The cock, when on the wing, looks like a black bird with white wings, and the hen like an owl, so much so that many a grass-owl has been shot for a florican, to the mutual disgust of owl and sportsman. The bird flies with head and neck outstretched, after the manner of a crane. The florican is not a difficult bird to shoot, as, when it rises, it flies stiffly; its wings flap three or four times and then stop for a few seconds as though the bird had been attacked by cramp. On the wing it has so ungamelike an appearance that I did not fire at the first florican I saw.

The florican feeds chiefly on insects, but it eats vegetable matter. In the stomach of one I found a plum stone. The stomach of another specimen contained 48 grass-hoppers, 1 locust, 19 beetles of various kinds, and a quantity of decomposed vegetable matter; from this it will be seen that the florican has a large appetite. In proportion to their size birds probably eat more than quadrupeds do, since they live at higher pressure. The temperature of their body is higher than that of mammals and flight makes great demands on the muscles. As Hedley expresses it, birds have more life in them than any other animal has. This doubtless accounts in part for the great charm they possess.

The florican is the best of the game birds for the table—so delicious is it that a man with whom I shot for a few days was most anxious to take one home to his wife, and, fearing that we should not come across any on the following days, insisted on having one plucked every day and buried to preserve it!

I regret to have to admit that I have no first-hand knowledge of the nesting habits of the Bengal florican, nor do I know of anyone who has.

Many years ago Hodgson wrote a detailed account of these, but he admits that his account is derived chiefly from native shikaris. Now, I have found these most unreliable witnesses. To illustrate, one of them once brought me a koel's egg which he swore that the bird had deposited, an hour before, in a crow's nest. When I expressed doubts as to whether he had actually seen the koel deposit the egg, he described in detail how she flew into the nest and the contortions she had undergone in the process of laying the egg. I took the egg and placed it in a crow's nest in the garden. The egg yielded a young koel the following day!

According to native shikaris the sexes of the florican live rigorously apart. To quote Hodgson " In the season of love the troops of males and females come into the same neighbourhood, but without mixing. A male that is amorously disposed steps forth and by a variety of very singular proceedings, quite analogous to human singing and dancing, recommends himself to the neighbouring bevy of females. He rises perpendicularly in the air, humming in a deep peculiar tone and flapping his wings. He lets himself sink after he has risen some fifteen or twenty yards, and he rises and again falls in the same manner, and with the same strange utterance; and this perhaps five or six times, when one of the females steps forward, and with her he commences a courtship in the manner of a turkey-cock, by trailing his wings and raising and spreading his tail, humming all the time as before.

When thus, with what I must call song and dance, the rites of Hymen have been duly performed, the male retires to his company and the female to hers. . . .into deep grass cover, and there, at the root of a thick tuft of grass with very little semblance of a nest, she deposits two eggs, never more or less, unless the first be destroyed. If the eggs be handled in her absence she is sure to discover it and destroy them herself. The eggs are of the size and shape of an ordinary domestic fowl's, but one is sensibly larger and more richly coloured than the other. This larger and more highly-tinted egg is that of the male young, and the smaller and less richly-hued egg that of the female progeny."

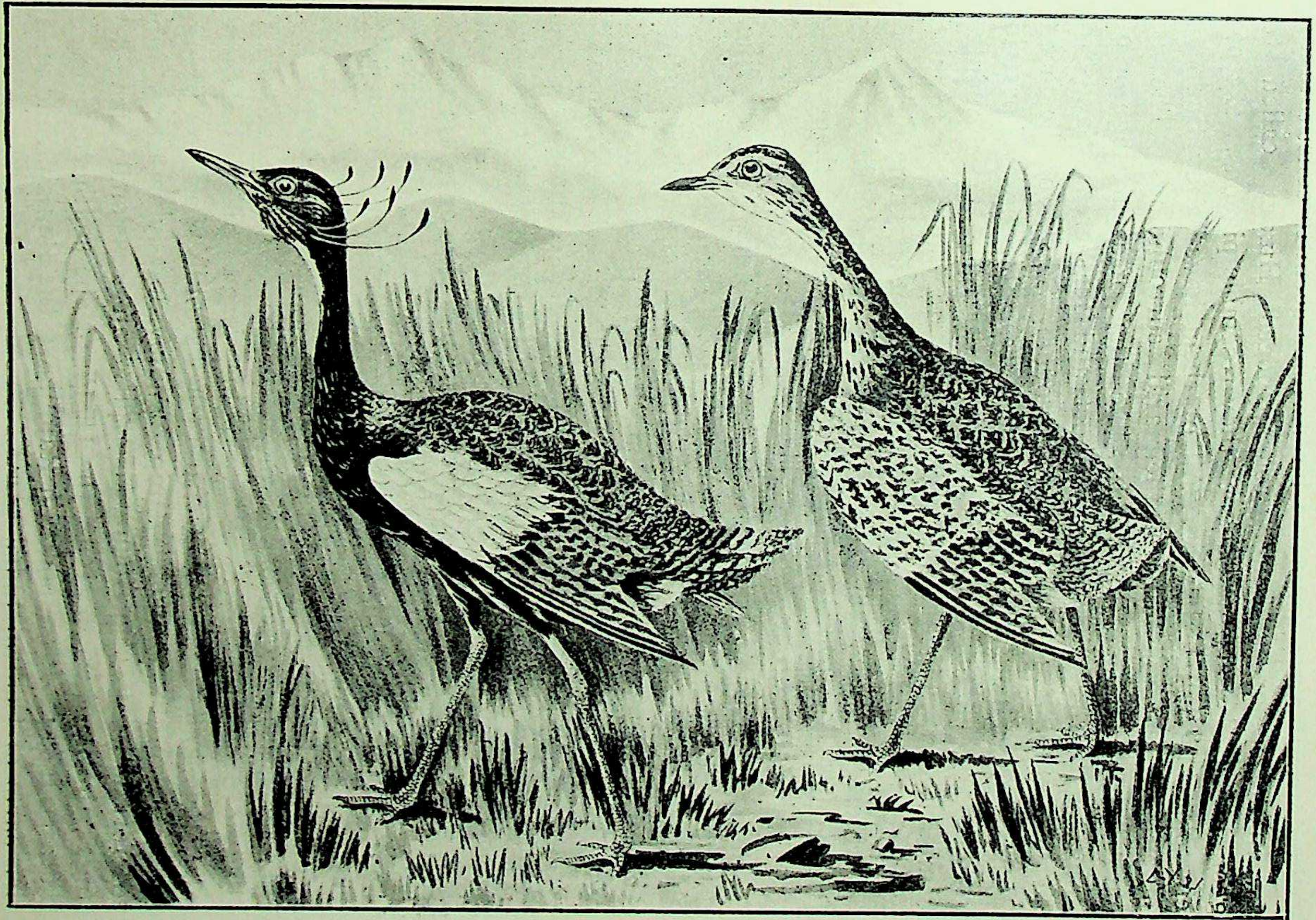
Hodgson admits that he had to pay for this information. His informer, quite rightly, deemed it his duty to give him something in return for his money; and, having a vivid imagination, he succeeded.

As we are still without a trustworthy account of the nesting operations of the Bengal florican, it is to be hoped that planters, forest officers and others who may have occasion to visit the breeding haunts of the bird will endeavour to gain some first-hand knowledge of its nesting habits.

The lesser florican or likh (*Sypheotis aurita*) is the same size as the little bustard, or rather the cock is; the hen is a little larger. The neck and legs are longer in comparison with the size of the bird than those of the Bengal florican. The hen is coloured like that of the Bengal species, and, in breeding plumage, the cock generally resembles in colouring his big cousin, but the feathers on the head and neck are much shorter. At the breeding season he develops on each side of the head three extraordinary feathers about four inches long, which project backwards and curl upwards; they are narrow for three-quarters of their length and feathery at the end. Seen from a distance the cock looks as though someone had stuck into him six feathery grasses. In the winter the cock assumes a livery like that of the hen, except that there is white in the wings.

There are many authentic accounts of the breeding operations of this species. It nests in the hot weather in South India and in the rains in the North. Three or four eggs are laid in a hollow on the ground.

The eggs are sometimes olive in hue, sometimes brown. At the time of mating the cocks rise in the air and make a croaking noise, in the manner described above. This is a purely Indian bird and undergoes some local migration. In the winter it is not often seen north of the Godavari, but in the breeding season it extends to Sind, Cutch, South-East Punjab, Rajputana and the Central Provinces. Stragglers may, however, be found in any part of Northern India, west of the Bay of Bengal.



THE LESSER FLORICAN OR LIKH (SYPHEOTIS AURITA). ¼ Natural size.

SAND-GROUSE.

Sand-grouse are a family of birds which seem to constitute a link between the pigeons and the grouse; indeed Huxley called them pigeon-grouse. In size and shape they resemble pigeons, except for their colouring, bill and legs. All of them have sandy tints which cause them to assimilate with their arid surroundings. The sexes have different plumage. The bill is like that of a partridge or other gallinaceous bird. The legs are short and feathered. Sand-grouse feed on seed which they pick off the ground. Save for the fact that they are monogamous, their nesting habits resemble those of partridges and other game birds. Although sand-grouse have points of resemblance with pigeons and game birds it is impossible to mistake one of them for a pigeon, a partridge or any other game bird. They constitute, like the Jews, a well-marked family. They breed in Africa and in Central and Western Asia. Some of them pay migratory visits to Europe.

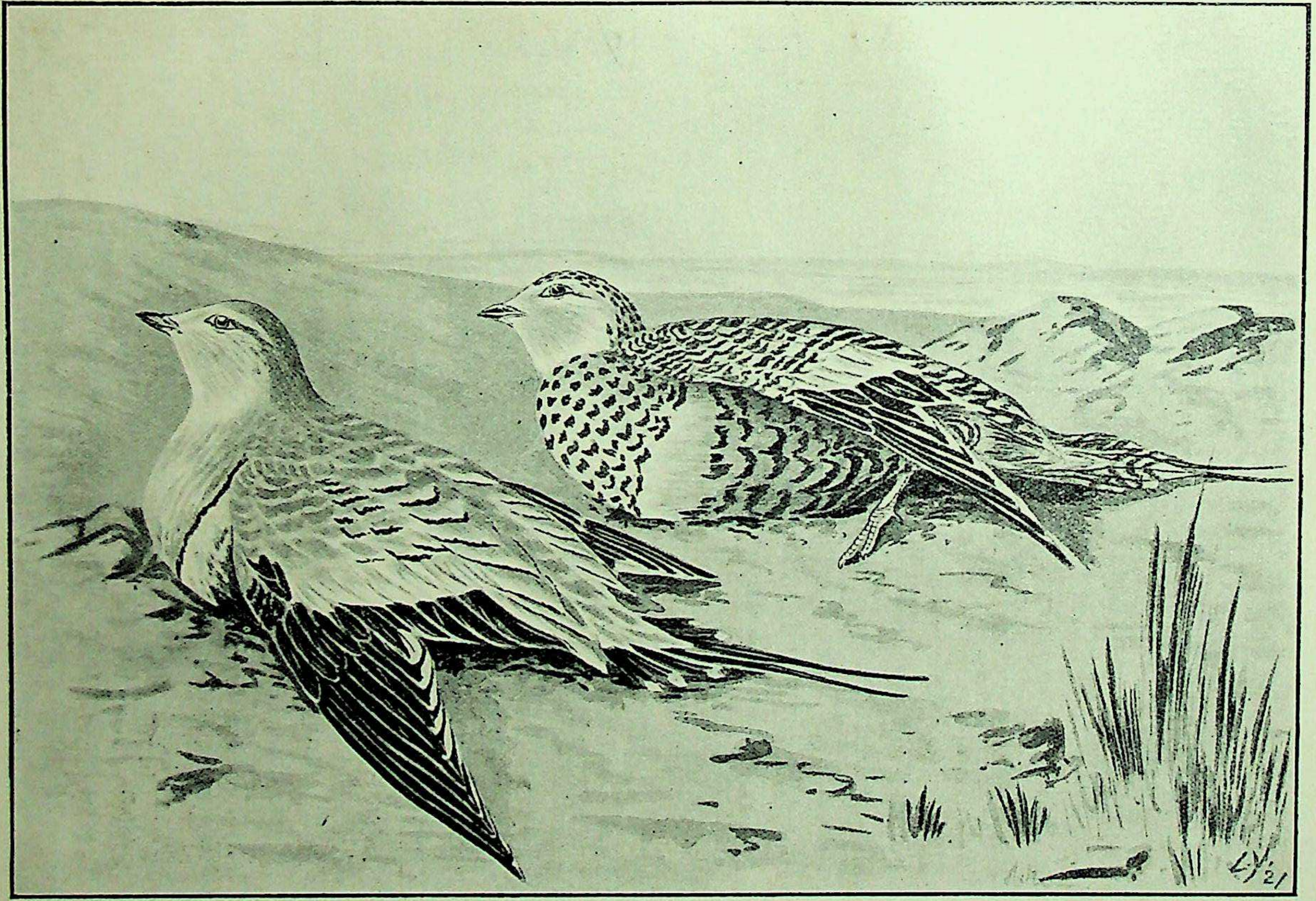
Eight species of sand-grouse occur in India. These, like the bustards, affect arid tracts of country.

The eight Indian species fall into three well-marked genera—Pteroclurus, Pterocles and Syrrhaptes. Of these the last is distinguished by having no hind toe. The species of Pteroclurus and Syrrhaptes may be distinguished at a glance from those of Pterocles by the fact that in them the middle pair of tail feathers is considerably longer than the others.

Let me first introduce the common sand-grouse (*Pteroclurus exustus*), since this, as the English name indicates, is the species most abundant in India. This bird is a permanent resident in considerable areas of Africa and Asia.

As regards its distribution in India, Hume writes: "It is a bird of the level, sparsely wooded, sandy countries *par excellence*, and although it may be shot in sundry plains *close* to hills in Rajputana, unlike the painted sand-grouse, it eschews hills, has no liking for scrub, and absolutely avoids damp, swampy, low-lying tracts, jungles and forests." It is not found, except as an occasional straggler, in Bengal, the northern parts of the U. P., or the southern portion of Madras. It is most abundant in Rajputana, the Punjab, Sind, and the drier parts of Central India.

The cock common sand-grouse is about the size of a dove, being a little over twelve inches in length, of which the tail accounts for nearly one half. The two middle tail feathers are narrow towards the tip and are prolonged beyond the others as bristle-like projections.



Common Sand-grouse (Pteroclurus exustus) resting. 1/3 Natural size.

The feathers that cover the head, back, chin, breast, legs and vent are pale brownish yellow, much the colour of desert sand. The larger wing feathers and the tail feathers are brown. The breast is divided from the abdomen by a narrow black gorget margined with white in front. The abdomen is dark brown.

This last feature is the source of much annoyance to Mr. Thayer and other American cranks, since it knocks the bottom out of their ridiculous theory that all birds and beasts and fishes are concealingly coloured. These worthies lay great stress on the fact that, generally speaking, the upper parts of animals are of darker hue than the lower parts. They assert that the reason for this is that were animals the same colour all over, the under parts, being in shadow, would look darker than the upper, and thus render their possessors more conspicuous than they are. It may be conceded that an animal the same shade all over is easier to see when standing in an open plain than one which is darker above than below, and were every animal that lives in the open thus coloured, there might be something in the theory that all animals are invisible in their natural surroundings. But we have the facts that numbers of birds and beasts exist which are, to use a draper's term, self-coloured, or even darker below than above, and that these flourish equally with those that are darker above, that most hunting animals seek their quarry by scent and not by sight, and that no animal, in its natural surroundings, is invisible to trained eyes.

These facts demonstrate the untenability of this latest theory of the cabinet zoologists, who have done so much to retard the progress of natural science. There is no such thing as an invisible animal. Of course, none are so blind as those who will not see!

The ground colour of the hen common sand-grouse is sandy, like that of the cock, but the hen is everywhere, except on the chin and a band across the front of the abdomen, barred and streaked with black. The feathers of the head and breast have black shafts, which give these parts a streaked appearance, while the other feathers, except those of the chin and part of the abdomen, have black cross-bars. The middle tail feathers of the hen are prolonged like those of the cock, but not to the same extent, being about one inch shorter.

Sand-grouse live, feed and sleep on the ground. For the sake of safety they congregate in flocks of twenty or thirty and these are said to post sentinels at night to give warning of the approach of a jackal or other predatory creature. Sand-grouse fly with great speed, and their skin appears to be so tough as to present considerable resistance to shot; at least I comfort myself with this explanation of the miserable results of my attempts to shoot them! Again and again have I fired into the " brown " of a flock, dashing a few yards over my head, without bringing down a single bird!

Sand-grouse are wary birds, and, as they live in the open, they can easily see a man approaching, so the only way to obtain a respectable bag is to shoot them when they are flying to, or returning from, the place where they drink. They are birds of regular habits; they drink daily about two hours after sunrise and, in the hot weather, shortly before sunset. They fly at a tremendous pace to the watering ghats, in flocks of from twenty to thirty birds. If you take up a position near a watering place, as many as one hundred of these little flocks may fly by in the space of half an hour. When on the wing, these birds emit a curious double note, which to me sounds like *hit me, hit me*—possibly it does not convey these derisive words to the ears of anyone who can hit them as they dash by! The note, though not very loud, carries a long distance and can be heard before a flock comes into view.

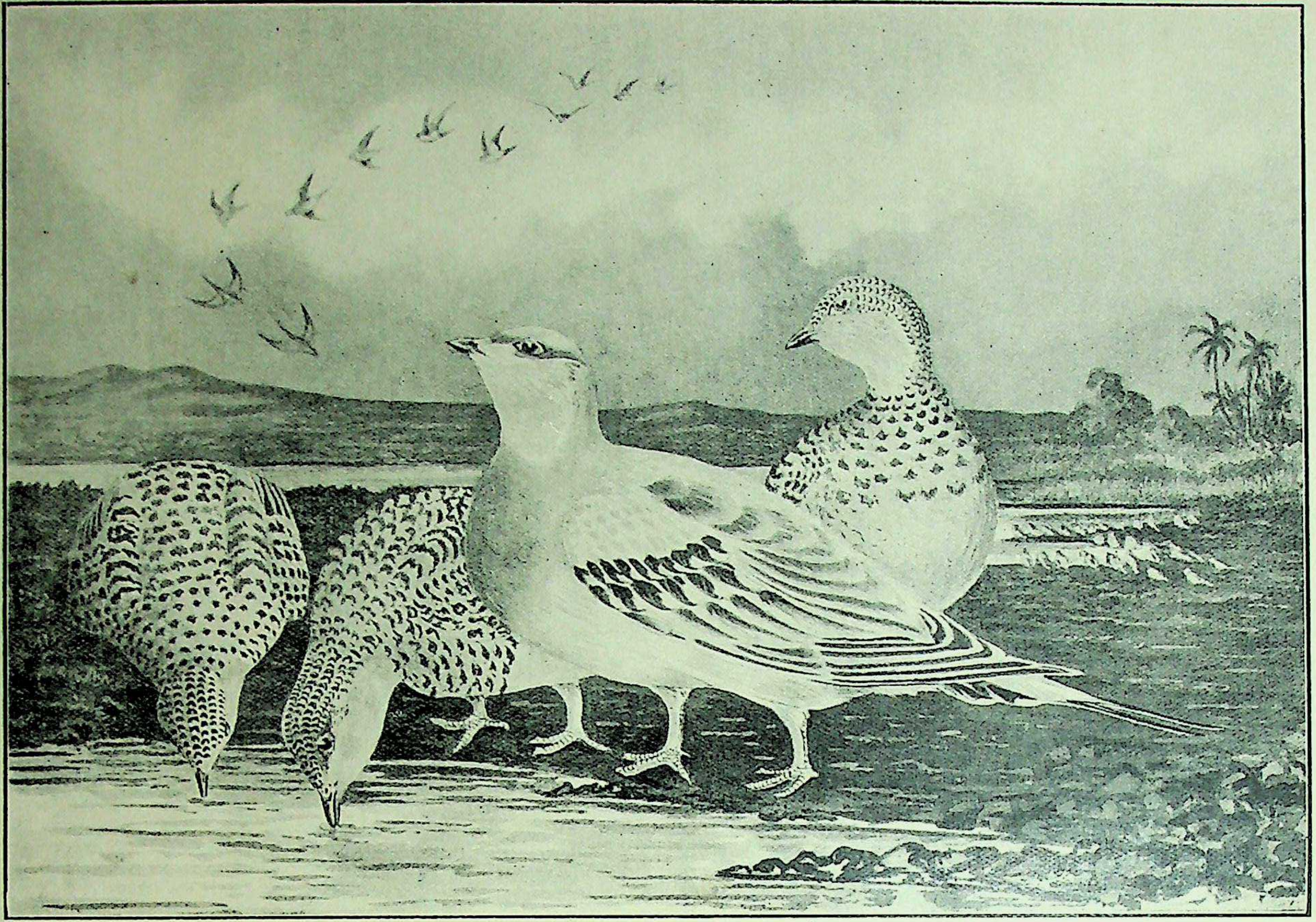
Hume states that sand-grouse rest for a time in the middle of the day, each in a nook beside a clod of earth or tuft of grass.

In Northern India, most eggs have been taken in April; in the South, the nesting season begins earlier. Three eggs are usually laid in a depression in the ground. The eggs are rather long in shape; the ground colour is grey or cream, speckled, spotted and blotched with brown and purple. As is the case with terns and many other birds that deposit their eggs on the bare ground, the eggs vary greatly in colouring. This fact militates against the theory that birds' eggs are protectively coloured. If this were the case, there should be little or no variation in eggs laid in the open in any given locality.

The spotted sand-grouse (*Pteroclurus senegallus*), I should prefer to call the yellow-throated sand-grouse, because, in both sexes, the chin, throat, cheeks, and sides of the neck are yellow ochre.

The female is boldly spotted with black on the remainder of the head and breast and on the back. It is these spots that give the bird the popular name although they are wanting in the cock. This is one of the very few cases of a bird being named after a peculiarity that occurs in the hen alone. The cock has a grey band running through the eye right round the back of the head; his upper breast is tinted with grey. In both sexes the abdomen is sand-coloured in front, changing behind to dark brown. The wing and tail feathers of the cock are sand-coloured, boldly marked with brown. The pin-tail feathers of this species are rather longer than those of the common sand-grouse. The spotted sand-grouse lives and breeds in those parts of Sind that are west of the Indus. In the cold weather some cross that river and spread themselves as far west as Ahmedabad.

The large pin-tailed sand-grouse (*Pteroclurus alchata*) is not very happily named, because the two species already described, as well as the Tibetan sand-grouse, have pin-tails, that is to say, the fine taper-

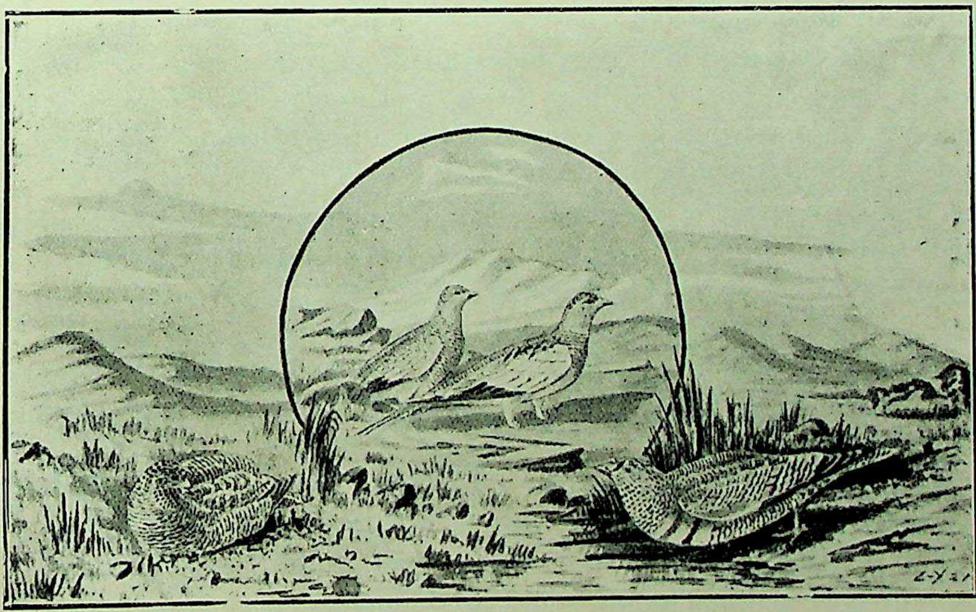


Spotted sand-grouse (Pferoclurus senegallus) drinking. 1|3 Natural size.

two middle feathers are considerably longer than the others. The adjective large is more appropriate, as this bird is about fifteen inches long. I should prefer to call this species the double-necklaced sand-grouse, since both the sexes display a necklace and a gorget.

The only other pin-tailed form having anything of the kind is the cock common sand-grouse, who has a single gorget. In the cock pin-tailed species, the head and upper back are light brown, tinted with yellow. The chin, throat, and breast are pale orange in both sexes and the abdomen white. There is, in both sexes, a black band dividing the white abdomen from the orange breast. The necklace across the breast is a narrow black band in the cock. The necklace of the hen is formed by three bands—a broad black line, followed by narrower yellow and grey ones. The hen has the head and all the upper parts barred with black. In the cock the crossbars are confined to the lower back.

The habits of both this and the last-named species are similar to those of the common sand-grouse, but the large pin-tailed species is only a winter visitor to India. The usual limits of its range are Delhi, Sambhar, and Karachi. It goes about in flocks numbering thousands and has a loud clanging call.



Tibetan Sand-grous in centre (Syrrhaptes tibetanus) and close-barred Sand grouse (Pterocles lichensteini) at sides. 1/5 Natural Size.

The only other pin-tailed sand-grouse, which occurs within Indian limits, is the Tibetan sand-grouse. As the name implies, this bird is an inhabitant of Tibet. It has no hind toe and the three front ones are feathered. Other sand-grouse have bare toes, the legs only being feathered. It is a sand-coloured bird, finely pencilled with black on the upper plumage. In the hen the pencilling extends to the wings.

We have now to consider the four Indian species of sand-grouse in which the tail is rounded or wedge-shaped and is devoid of any projecting pin-feathers.

These belong to the genus Pterocles. Their habits are very similar to those of the birds described above. The chief differences between the various species, apart from those of size and colouring, lie in their call-notes and the magnitude of the flocks they form.

Of the four Indian species of Pterocles, one has the belly black, another sand-coloured, and two sandy, barred with black.

The black-bellied sand-grouse (*Pterocles arenarius*) is one of the largest of the sand-grouse, being fourteen inches long of which but four constitute the tail. For this reason the bird is sometimes called the large or imperial sand-grouse. The cock, like those of the other three species, is a handsome fellow. His general hue is sandy, but he boasts of a dull red throat and a black chin, gorget and abdomen. The head, neck and back of the hen are sandy yellow, streaked and barred with black: she lacks the red on the throat.

The species is a winter visitor to North-Western India and is numerous during the cold weather in some parts of the country. Hume, during the course of a fifteen miles' drive near Ferozepore, once saw over a hundred flocks of these birds, and, on another occasion, near Jodhpur, he came upon a company of fully two thousand of them, packed in an area of 90 by 30 feet !

The coronetted sand-grouse (*Pterocles coronatus*) has the abdomen sandy-coloured in both sexes. The cock has an ashy grey band running from eye to eye round the back of the head. His throat is black and there is a band of this hue on each side of the forehead. The hen is a sand-coloured bird, barred with black. This species extends from the west bank of the Indus, through Baluchistan, Persia and Arabia to Africa.

There remain the two sand-grouse, of which the belly in both sexes is barred with black. These are the painted sand-grouse (*Pterocles fasciatus*) and the close-barred sand-grouse (*Pterocles lichensteini*).

The cock painted sand-grouse is a striking bird. The forehead is white, with a black band across it from eye to eye, like the bridge of a pair of horn-rimmed spectacles. On the top of the head are some longitudinal black streaks. He wears a gorget composed of three bands: the front one is chestnut, the middle one buff, and the hind band black. The hen lacks these ornaments; she is a sand-coloured bird, with narrow black bands on the head and cross-bars on the remainder of the plumage.

The species does not occur in flocks. It drinks before sunrise and after sunset.

It is confined to India, and may be found in the Sewaliks and the rocky hills of the U. P., Rajputana, Cutch, Guzerat, the C. P. and the Deccan.

The cock close-barred sand-grouse has a white forehead with a black cross-bar. He has a black band across the breast and another dividing the abdomen from the breast. He has longitudinal stripes on the head and is closely cross-barred all over the rest of the plumage. The hen has the forehead closely barred and lacks the black bands across the breast and abdomen; otherwise she is like the cock in appearance. The close-barring, which gives the species its English name, makes its identification easy. This bird is an inhabitant of North-East Africa, Arabia and Baluchistan, and visits Sind, west of the Indus, in the cold weather.

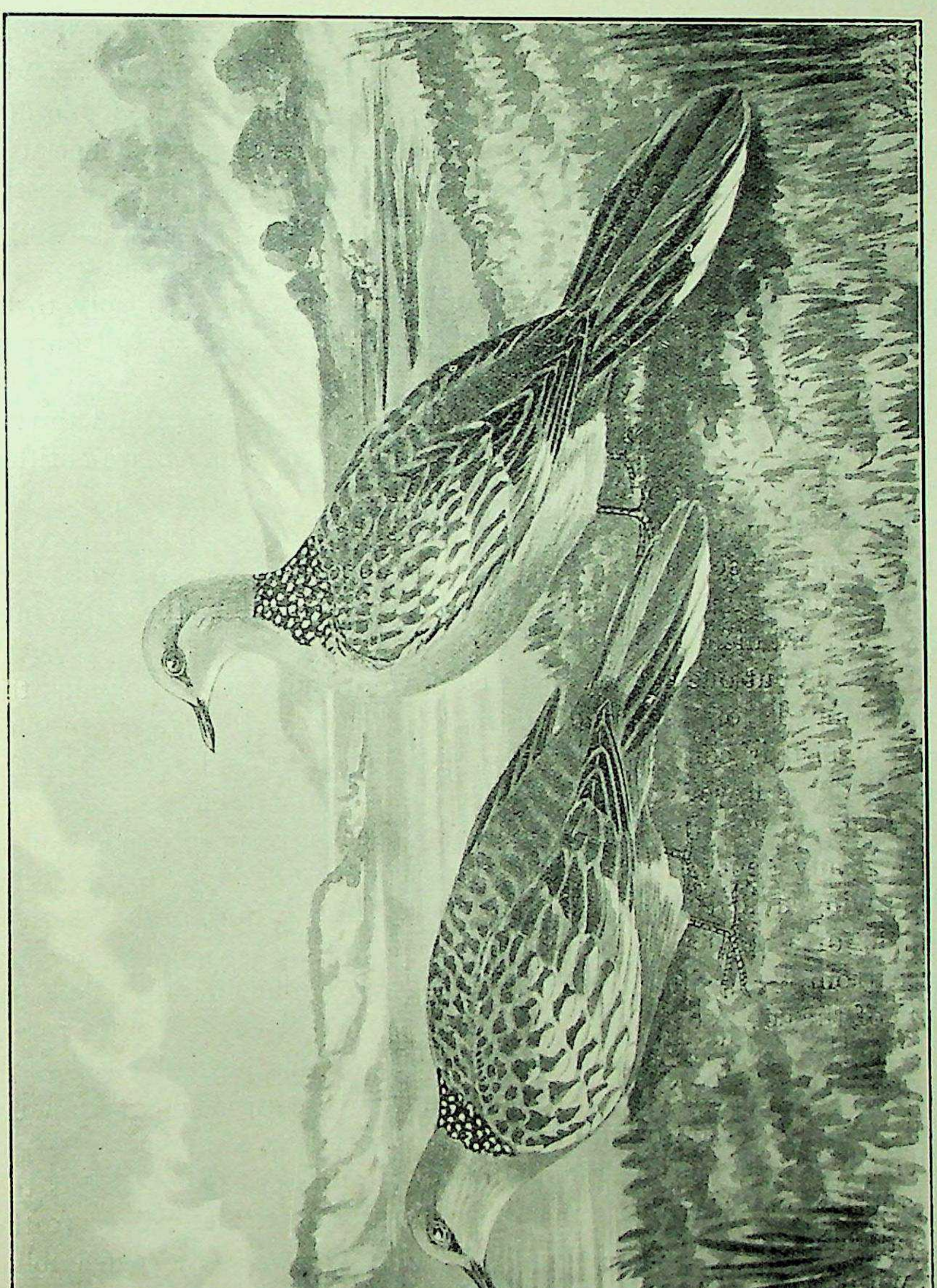
DOVES.

The Zoologist makes no distinction between doves and pigeons. He is justified in taking up this attitude. Anatomically there is no difference between a dove and a pigeon, nor is it possible to point to any habit of the dove and say: " By this may you distinguish between a dove and a pigeon." When all is said, the only real difference is that pigeons are shot for sport, while doves are not; presumably, because the dove has very little meat on it!

Before describing individual members of the cooing community, let us notice some of its general characteristics. These are well marked. The head is small and the wings are long and powerful: the latter sometimes strike one another when their possessor is flying. The bill is rather weak and is swollen at the base. Doves and pigeons are monogamous and pair for life. They construct the flimsiest of nests, usually a pad of fine twigs or dried grass, balanced on the branch of a tree or some unsafe place. Two white unmarked eggs are laid. The nestlings, unlike those of game birds, are blind and almost naked when they leave the egg and present an unsightly appearance until they are nearly grown up. In this respect they afford a strong contrast to the beautiful little ducklings. Pigeon nestlings do not greet their parents with wide-open mouths, but put the bill inside that of the parent and imbibe the secretion from the crop known as pigeon's milk.

Jerdon declares that pigeons, although mainly vegetable feeders, sometimes eat small snails. While not going so far as to contradict Jerdon, I must state that I have never seen a dove or a pigeon eating any animal matter. Green pigeons eat fruit and the others grain, mingled with a little greenstuff.

Doves have, from time immemorial, been held up as emblems of meekness. Never was a reputation less deserved. There is only one thing in which doves are like the meek; that is, they literally inherit the earth. They flourish like the green bay tree everywhere in India. My opinion of the family—formed after considerable experience—is that the members of it are bad-tempered and pugnacious. Colonel Cunningham would hold that these adjectives are too mild. His summing up of the character of the cooing community is worthy of Burke. " Spotted doves," fulminates he, " like most of their relatives, are perfect whited sepulchres of ' envy, hatred and malice ' and are continually squabbling and fighting with one another and with other birds. How any kind of dove should ever have come to be regarded as ' harmless ' must remain an insoluble problem, for even a very casual observation of their manners and customs is enough to show that their



THE SPOTTED DOVE (TURTUR SURATENSIS).

meek and peaceful air is an arrant fraud, veiling selfishness and ill-temper of the deepest dye."

A fairly wide experience of the ways of many distinct kinds of pigeons and doves has taught me to be very cautious in confining more than a single pair of any species within a limited space. No matter of what kind they may be: all alike—Gouras, Nicobar-pigeons, fruit-pigeons, turtle—and ground—doves—are exceptionally irascible and malignant. "The beautiful bronze ground-doves are," he declares, "really quite fiendish in their ferocity; and occasionally, not content with plucking out all the feathers from the necks of their enemies, actually lay bare the bones of the spinal column below. Fruit-pigeons appear to be somewhat better tempered, but this is probably to be ascribed to their excessive greed, for they are usually so full gorged as to be indisposed for any active exertion."

In the Fauna of British India twelve species of doves and thirty-two of pigeons are described. Of these only about a dozen are entitled to a place among the common birds of India.

Let us begin with the doves. Perhaps the most convenient method of classifying these is to divide them into tuppence-coloured and penny-plain or showily-dressed and quietly-attired, subdividing the latter into long-tailed and medium-tailed.

There is but one showily-dressed dove in India, it is known as the bronze-winged or emerald dove (*Chalcophaps indica*). This beautiful bird is confined to well-wooded gardens and forests in the plains and the lower ranges of hills. Its distribution has not been thoroughly worked out, but I know of no reason why it should not be found in any dense forest. Most sportsmen must have noticed the bronze-winged dove when shooting in the Terai. It often flies past the occupant of a machan while the beaters are approaching, being dislodged from its feeding ground, like so many other creatures, by the shouts of the coolies.

So many colours occur in the plumage of this bird that complete descriptions of the attire of the cock and that of the hen (for they do not dress alike) would occupy the greater part of a column.

The following outline should, however, suffice. The cock has the back and wings emerald green or coppery bronze, according to the angle at which rays of light are reflected therefrom. The head is blue grey, with a white forehead and eyebrow. The wing lining is chestnut. The middle tail feathers are dark brown and the outer ones grey, with a black cross-band near the tip. The under plumage is the colour of a faded claret stain on a white table-cloth.

The hen has the brilliant wings of the cock, but the head and neck are brown, and the forehead and eyebrow pale grey. The bird is 10½ inches long, the body being 6½ and the tail 4. The bronze-winged dove feeds on berries and seeds and is said to be very fond of castor oil seeds. Its call is a soft plaintive coo. It builds, between February and July, a neat little platform in a bush or small tree. The nest is sometimes within two feet of the ground. Two creamy white eggs are laid.

We now come to the quietly-dressed doves. It must not be thought that I have employed this adjective to denote dowdiness: far from it. The plumage of most of these doves is beautiful, but, as "Eha" remarks, "their loveliness is not that of golden orioles and kingfishers, but rather of clouds and distant hills and soft sunsets."

The long-tailed doves have a tail as long as the rest of the body. Only four species are found within the limits of the Indian Empire. One of these—the barred ground-dove (*Geopelia striata*)—extends from Tenasserim through the Malay Archipelago. It is not much larger than a bulbul and may be identified by the sides of the neck, breast and flanks being barred black and white.

The other three Indian long-tailed doves are known as cuckoo-doves. They are easily identified, because the tail is graduated like that of the Indian tree-pie, the middle pair of feathers being the longest and each successive pair being shorter than the pair next to it on the inner side. Three species of cuckoo-dove occur in India; none of them are common.

The bar-tailed cuckoo-dove (*Marcropygia tusalia*) is found in the Himalayas, east of Simla ; the Andaman cuckoo-dove (*M. rufipennis*) inhabits the Andamans and the Nicobars, while the little Malay cuckoo-dove (*M. ruficeps*) spreads south-eastwards from the southern parts of Burma.

The doves that have tails of medium length include three of the most abundant and most familar birds of India. One or more of these occur in every Indian garden. These are the little brown dove (*T. cambayensis,* the spotted dove (*T. suratensis*) and the Indian ring-dove (*T. risorius*).

The little brown dove is smaller than a myna. The prevailing hue of its plumage is the brown of dry earth, but the head is washed with dull red and the breast and fore part of the wing are delicately tinted with lilac. There is on each side of the neck, what looks like a miniature black-and-red chess board. The legs are crimson lake. The call of this dove is soft and pleasing; it consists of five notes which sound like cuk-cuk-coo-coo-coo the last three notes being repeated rapidly. This species is abundant all over the plains of India, west of Bengal. It ascends the hills to the height of about 2,000 feet.

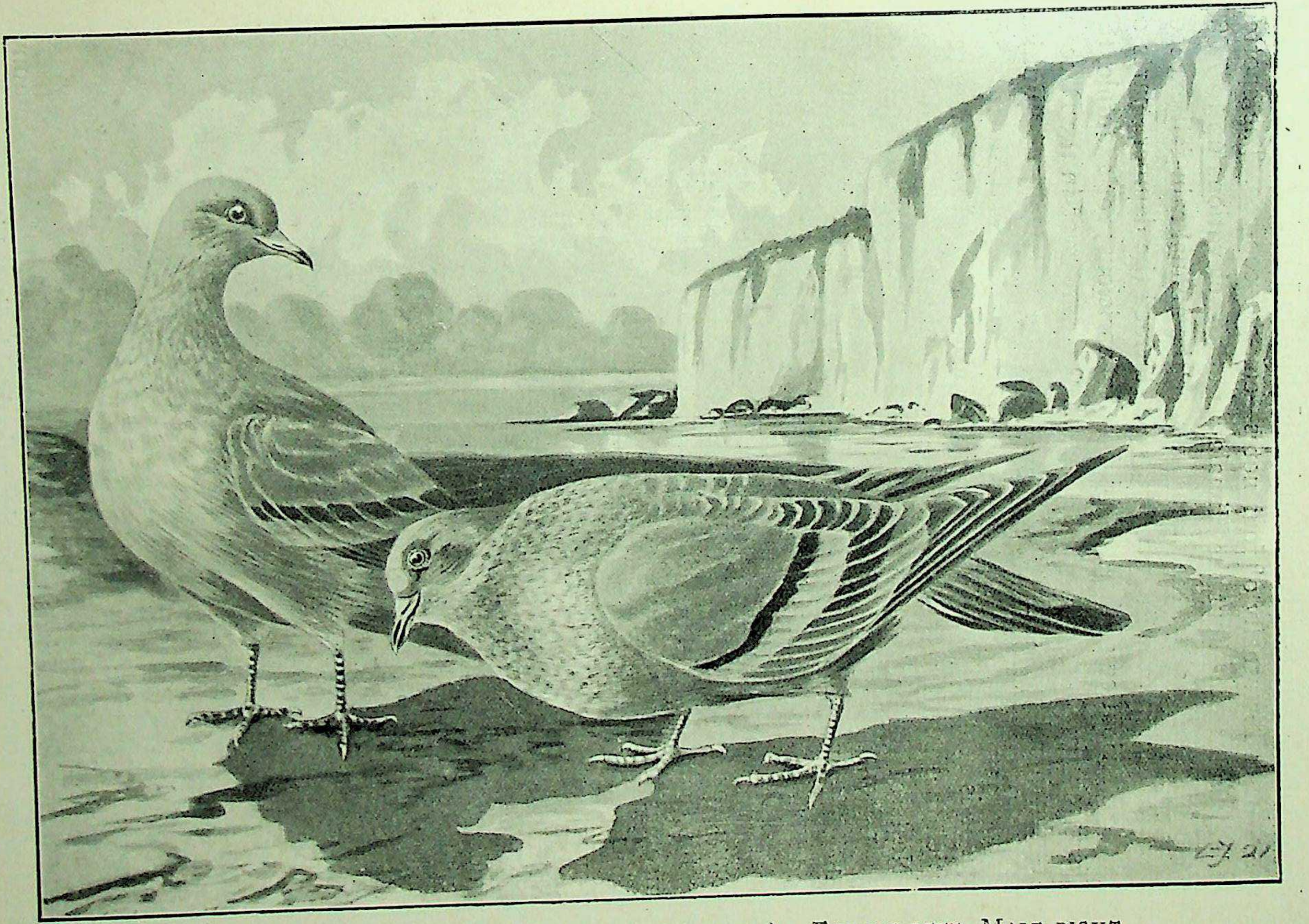
It lives by preference in gardens and low bush jungle. It is one of the many birds that use telegraph wires as perches. It feeds on grass seeds and other small grains, which it, like other doves, picks up from the ground. It builds a very slender platform of fine twigs and dried grass by way of a nest. "The nest," writes Blandford, "is placed indifferently on shrubs or low trees, or on buildings, or occasionally on the ground." I have not come across a nest of this bird built on the ground, but have found it in all manner of strange situations. One pair at Lahore built a nest on the ledge afforded by the rolled-up part of a verandah *chik*. When the weather grew hot the *chik* was let down and in consequence the nest and eggs, like Humpty Dumpty, had a great fall. The pair of doves in question then proceeded to put together a fresh nest on top of the verandah *chik* ! This nest was balanced on the upper-most strip of split cane and was only prevented from falling by the fact that one side of the nest was up against the wall. In this nest this particular pair laid five successive clutches of eggs. The history of each clutch is described in *Birds of the Plains*.

Mr. A. Anderson gives the following account of the nesting escapades of another pair: "In 1863 I had occasion to have a standing camp for some ten days; and a pair of *T. cambayensis* soon discovered what appeared to them an eligible site for a nest in the verandah of my single-pole tent. At first I kept the inner *chiks* invariably down at the side the doves used to enter from, so as to allow them to construct their nest unmolested, but in the course of two or three days this precaution was quite unnecessary.

"The nest, if such it can be called, was placed close to the fringe of the kunnaut, on one of the corner ropes, where it is double for some six inches and there knotted.The double portion was just broad enough, being three inches apart, to support the nest with careful balancing; the knot acted as a sort of buffer, and prevented the twigs from sliding off, which most assuredly would otherwise have been the case, for the rope just there was at an angle of 45 degrees. My tent had to be struck before the eggs were laid.

"On another occasion a pair of these doves built on the outer ledge of a glass window-sill in my office room, where I had ample opportunity of observing heir habits; both birds took their turn pretty equally on the eggs, as also in feeding their young; the male bird frequently fed the female as well."

The breeding season lasts from January to August. Each pair seems to raise from two to five broods in the year. This unusual number of broods appears to be correlated with the fact that only two eggs are laid on each occasion.



Indian Blue Rock-pigeon (Columba intermedia). Female left, Male right.

The spotted dove (*T. suratensis*) is about the size of a myna. The head is reddish grey with a black-and-white chess-board on each side of the neck. The wings are brown, spotted with dull red. It is these spotted wings that have caused the bird to be named the spotted dove. The call is usually of four notes—cuk-coo-coo-coo. The spotted dove is found throughout the Himalayas at all elevations up to 7,000 feet and in those parts of the plains where the annual rain-fall exceeds thirty inches, but even in what may be termed the damper parts of India the distribution of the spotted dove is capricious; for example, the bird is rarely, if ever, seen on the island of Bombay or in the Deccan. It is common in Bengal, Madras, Bihar and Oudh, but avoids the Punjab and the drier parts of the U. P., such as Agra, Etawah and Muttra. In Burma it is replaced by the Malay spotted dove (*T. tigrinis*)—a race in which the spotting on the back is less pronounced.

Nests of the spotted dove have been taken in every month of the year. In Northern India most nests are found between February and October. In Eastern Bengal, November to May is the usual nesting period. The spotted dove dumps the slender platform of twigs that does duty as nest anywhere—in trees or bushes; on buildings in verandahs, on beams or *chiks*. Says Mr. R. Thompson : "In their selection of sites for their nests these birds show very little intelligence, suiting themselves to the first place they find handy, often amongst old furniture in the verandah of a house, cornices of old buildings, low hedges and bushes, or even the lopped trunk of a tree, if a flat surface is left sufficient to place the nest on, and often in the most exposed situations, where the wretched birds are sure to pay the penalty of their imprudence."

The slenderness of the dove's nest is sometimes the subject of ridicule. The eggs usually show through the bottom! One wag said that the average dove's nest is composed of two long twigs laid on an inadequate base, with two short twigs placed crosswise on top of the long ones. Thompson took the trouble to count the number of twigs that composed some nests of the spotted dove and found each nest to be composed of from fifty to one hundred and fifty small twigs and roots, laid losely together.

Spotted doves will mob a tree-pie, or any other bird that approaches their nests. Cunningham declares that he has seen them pluck out large mouthfuls of feathers from their enemies' bodies. I have never observed one of these birds really drive an attack home in the manner described by Cunningham; even the redoubtable little king-crow rarely does this.

The Indian ring-dove (*T. risorius*) is common in Ceylon and many parts of India. It seems to occupy chiefly those tracts of country that are avoided by the spotted dove. It visits the Himalayas and Afghanistan in summer. It is a grey brown bird, tinted with lilac on the head and breast. It may be distinguished at a glance from the spotted and the little brown species by a black half-collar, narrowly bordered above and below with white, which it wears round the back of the neck. Its note is tri-syllabic, with a marked hiatus between the second and third syllable—coo-coo-coo. There is about as much expression in this note as there is in the squeak of a mechanical toy.

This is less of a house dove than the two described above. Its nest is nearly always placed in a tree, is of the usual description, and contains some grass. Only this morning (July 16th) while I was watching a roller feeding young birds in a hole in a eucalyptus tree growing in the Lawrence Gardens at Lahore, I noticed a ring-dove with a long stem of dry grass in the bill. The bird flew with this into the tree. On looking up I saw this bird and its mate at work at a nest on the stout stump of a broken-off branch, some twenty-five feet above the ground. One bird was collecting grass while the other was arranging the nest materials. This species breeds throughout the year.

Less plentiful than the three species just described, but nevertheless a common bird in most parts of India, is the red turtle-dove, which men of science (Bless them !) have saddled with the name *Oenopopelia tranqebarica tranqebarica* ! This pretty bird is smaller even than the little brown dove. The hen is like a small edition of the ring-dove, and I have seen one wrongly labelled "ring-dove" in an Indian museum. The cock is distinguished by having rusty red wings. The call is a harsh, grating, grunting coo, repeated several times. This bird is only a summer visitor to the Punjab, where it breeds. Its nesting habits resemble those of the ring-dove.

In conclusion, mention must be made of the Indian turtle-doves. According to the *Fauna of British India*, there are three different species of turtle-dove found in India. These, like the spotted and little brown dove, wear a chess-board on each side of the neck.

People who have visited Mussoorie or Simla may have noticed a grey dove like the ring-dove but with the black collar replaced by a black-and-grey chess-board. This is the Indian turtle-dove (*T. ferrago*).

A large edition of the little brown dove with the chess-boards black and grey instead of black and red is the rufous turtle-dove (*T. orientails*). This bird occurs in the Eastern Himalayas and in Bengal, Chota Nagpur, Central India, Assam and Burma, but is nowhere common. It sometimes goes about in flocks. The turtle-dove of Europe (*T. communis*), which is like a little brown dove, but with black-and-white chess-boards, has been known to come as far east as Quetta and is therefore numbered among the birds of India.

PIGEONS.

Pigeons fall into two classes—seed-eaters and fruit-eaters. The seed-eating species are the rock-pigeons, the wood-pigeons and that curio—the Nicobar pigeon.

The Indian blue rock-pigeon (*Columba intermedia*) is one of the commonest birds in India. It occurs in abundance everywhere in the plains and ascends the hills up to elevations of about 5,000 feet. Curiously enough, this bird is not seen at Rangoon or in Lower Burma, but it is likely soon to extend to those parts. I saw it on the roof of the church at Maymyo last year. The blue rock-pigeon is of confiding nature and is easily domesticated; it often mingles and breeds with domestic pigeons. It is the ancestor of all the fancy breeds of pigeons.

Detailed description of so familiar a bird is scarcely necessary. The general hue of the plumage is blue grey. The neck and breast are glossed with green and purple. There are two black bars across the wings. The legs are deep red and the eyes are orange brown.

The blue rock-pigeon of Europe, which sometimes visits Northern India, has a white bar across the back, hence it is, or was, considered a different species and called *Columba livia.*

Another species or race— the blue hill-pigeon (*C. rupestris*) has a white band across the tail. This pigeon is found in Tibet and some of the drier valleys of the higher Himalayas.

The Eastern stock pigeon (*C. eversmanii*), which is distinguished by its yellow legs, visits Northern India in comparatively small numbers in winter.

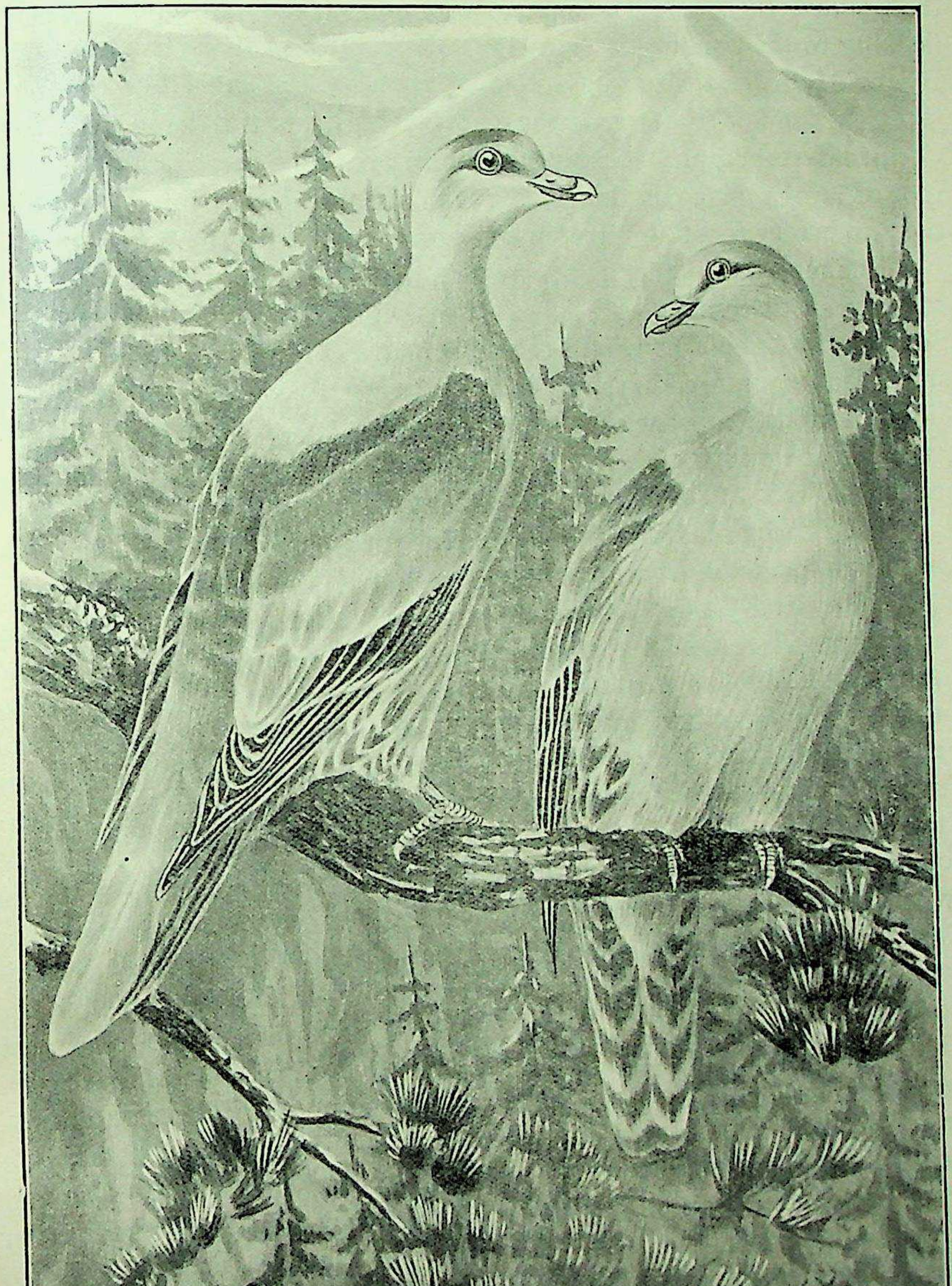
A fifth pigeon—the snow—or white-bellied pigeon (*C. leuconota*) is seen in the Himalayas at high elevations in summer. In the winter it comes lower down and mixes with the blue rock-pigeons. As its name implies the lower parts are white. It lacks the metallic sheen on the feathers of the neck and breast.

Of the above pigeons the Indian blue rock is the only one that is really common in India.

This bird, like the crow and the sparrow, affects human habitations. It feeds entirely on grain which it picks up in busy thoroughfares in preference to seeking it in the fields.

A characteristic of this bird is that it roosts on rocks or buildings in preference to trees.

Blue rock-pigeons roost in companies. Sometimes these companies are immense, at others they are quite small. At Benares, for example, all



The Kokla Green Pigeon—Male left. Female right (Spenocercus Sphenurus.)

the pigeons of the vicinity roost on the roof of the Queen's College; while in the neighbouring town of Ghazipur they spend the night in small flocks at various buildings. People at Benares should make a point of visiting the College there one day, just before sunset, and watch the pigeons flocking to the building in companies of from two to forty individuals. By nightfall there is hardly standing room on the capacious roof. At Ghazipur some fifty pigeons roost every night on the dome over Lord Cornwallis' cenotaph. Except at the very summit there is not a square foot of level surface on this cupola: the pigeons do not mind this; they seem to prefer roosting on a surface at an angle with the horizontal!

Lucknow is another town where the blue rock-pigeons prefer to roost in small companies. The fort at Dig and the Gaisoppa Falls in South India are places where the pigeons roost in huge armies. Hume states that a gun fired in the moat at Dig towards evening raises a dense cloud of birds, "obscuring utterly the waning day while the countless rapidly-plied wings give rise to a mighty rushing sound." It may be mentioned that at Dig pigeons are accounted sacred birds.

The nesting season of the Indian blue rock-pigeon begins on January the 1st and ends on December the 31st. It is probably at its height in April, May and June. The nest is a pad of twigs, placed on anything but a tree. I could fill a small volume with descriptions of pigeons' nests I have found in curious situations. A favourite site is on a cornice inside an inhabited building. One day, when inspecting the court of the bench of Honorary Magistrates at Pilibhit, I noticed two pigeons' nests on the cornice that ran round the court room. In the Ghazipur district the clerks of a tahsil complained that the pigeons which nested in the room where they sat used to soil their records! In January 1918 I spent two or three days in a bungalow in the Ghazipur district belonging to the Rani of Ausanganj. A cornice ran round the dining room. On this was a pigeon's nest containing a young bird. I obtained a ladder to examine this nest and found that it contained two eggs in addition to the young bird. The last flew off the nest when I attempted to handle it, and alighted on a screen in the room. As it fluttered off the nest it broke one of the eggs, which was quite fresh. From this it would seem that the hen pigeon had laid a second clutch before the first brood had left the nest. She was evidently letting the young bird assist in incubation!

While inspecting a police station in the Ghazipur district I noticed a pigeon sitting on a nest on top of one of the pillars supporting the roof of the stables. As the roof sloped there was room, between this and the top of the pillar, for the nest.

The bungalows of the Aitcheson College at Lahore are made with bay windows that open into verandahs, so that there is a space between the roof of the bay and the ceiling of the verandah. The sloping roof of the bay affords a nesting site eagerly sought after by pigeons. They have plenty of elbow room, and are protected from sun and rain.

That imposing architectural freak—the Judge's Court at Benares—is a building after the heart of the local blue rock-pigeons. In the outer walls, which open into verandahs, are numerous circular apertures about two feet in diameter. I do not know the technical name for these openings, but I do know that they render it impossible to prevent cold air in winter and hot air in summer entering the building! In consequence the human beings who frequent the courts are wont to say hard things about the architect and to wonder why these openings were made. Not so the pigeons; they know that these holes were put there to serve as nesting sites, and, what is more, they make full use of their knowledge; thus its comes to pass that the judges and munsiffs, while weighing evidence in their minds, can, if they desire, feast their eyes on falling twigs, feathers and excreta. Whether they like it or not they have to listen to the soft, self-satisfied coos of the *columbidae.*

The eastern wood-pigeon (*Palumbus casiotis*) is the Asiatic counterpart of the wood-pigeon of Europe (*P. torquatus*). These two species (perhaps it would be more correct to designate them races) differ in appearance only as regards the neck patch. This is buff in the Asiatic form and white in the European one. It is this white patch on each side of the neck that has given the bird one of its English names—the ring-dove. The name does not fit this great heavy pigeon.

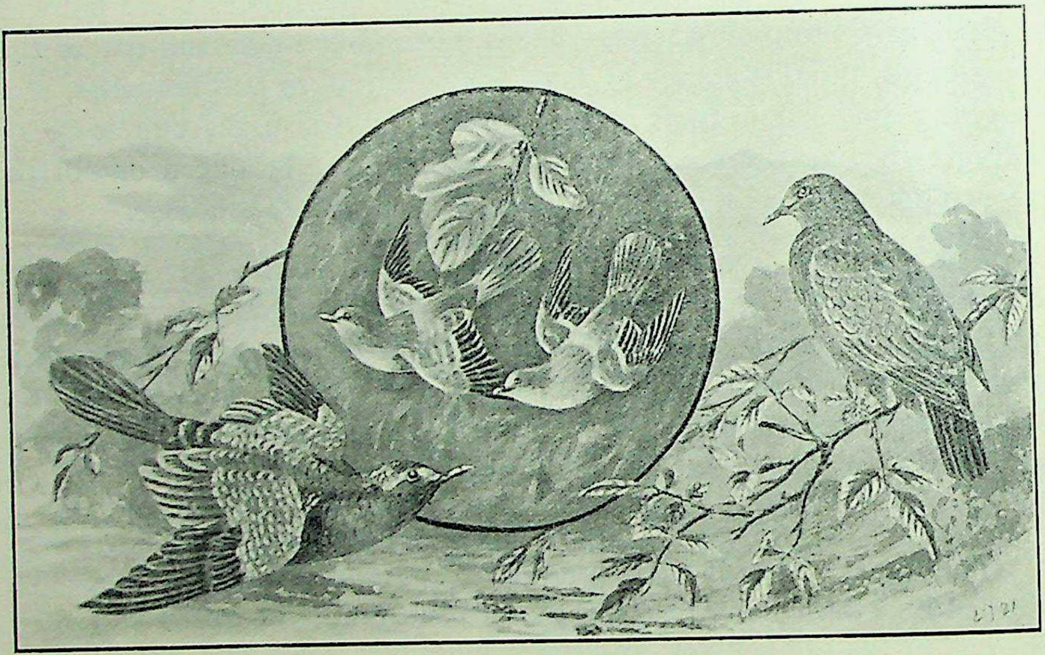
The upper parts of the plumage of *Palumbus casiotis* are grey, the sides and back of the neck being glossed with metallic green and purple. The end of the tail is black, and there is a white wing-bar at the angle of the wing. This bird has the usual habits of its kind. Its call may be written "Roo, coo, oo, oo-oo." It occurs in Afghanistan and the Himalayas, west of Kumaun. In the winter some individuals visit the plains of the Punjab and Sind.

The Nicobar pigeon (*Caloenas nicobarica*) is a pigeon which seems to be trying to convert itself into a game cock; it has got as far as developing long neck hackles. The bill is long for a pigeon and has a fleshy excrescence near the base. The upper plumage of this pigeon is slate-coloured, but the longer hackles display the green and red sheen that is so characteristic of grain-eating pigeons. The lower plumage is dark glistening green. The tail is white, but, being short, it is almost hidden by the blue-grey wings. The Nicobar pigeon is a larger bird than the blue rock-pigeon. Its habits are like those of the other pigeons, but it lays only one egg instead of the usual brace. As the name implies it is resident of theNicobar Islands. It also occurs on other islands in the Malay Archipelago.

We have now to deal with the fruit-eating pigeons. These come under three categories—green pigeons, imperial pigeons and wood-pigeons.

The *Fauna of British India* describes thirteen species of green pigeon as found in India. Only three of these are common birds. The other ten may therefore be dealt with summarily. Seven of them belong to the genus Osmotreron, in which the sexes differ markedly in appearance. These seven species are:

The ashy-headed green pigeon (*O. phayrei*), found from Bengal to Cochin China.



Middle Circle, Bengal Green Pigeon (Crocopus phoenicopterus)
Outside of circle, Bronze-winged Dove (Chalcophaps indica) Male left, Female right.

The grey-fronted green pigeon (*O. affinis*), found in the forests of the west coast of India, south of Bombay.

The pompadour green pigeon (*O. pompadora*), found in Ceylon.

The Andaman green pigeon (*O. chloroptera*), found in the Andamans and Nicobars.

The cinnamon-headed green pigeon (*O. fulvicollis*), found in South Tenasserim.

The pink-necked green pigeon (*O. vernans*), found in South Tenasserim.

The orange-breasted green pigeon (*O. bicima*), found in the forests of South India and Ceylon.

The thick-billed green pigeon (*Treron nepalensis*), has also the sexes of different appearance. It is a small pigeon, being ten-and-a-half inches in length as opposed to the thirteen inches of the blue rock-pigeon. It occurs in the Eastern Himalayas and extends from Eastern Bengal to Cochin China and the Philippines.

Having disposed of these *rarae aves,* let us now consider the common green pigeon, which everyone of us has shot and eaten. This bird belongs to the genus *Crocopus.* Few birds sport so many colours as the common green pigeon. These are all laid on very delicately and are beautifully blended, so as to give the bird the general colouring of a green leaf. For this reason green pigeons are very difficult to see in the foliage where they spend their time. There is some grey on the head, some lilac, yellow and black on the wing, a patch of dull red under the tail and some black on the tail. The remainder of the plumage is of varying shades of green and yellow. There is a pink ring round the blue iris. The tip of the bill is pale blue and the legs are orange yellow. The bird is the same size as the blue rock-pigeon. The older ornithologists divided the green pigeons of this genus into three species, the Bengal, the Burmese and the Southern green pigeon. More modern ones lump the Burmese and Bengal species into one. I would go further and call them all one species—the Indian green pigeon (*Crocopus phoenicopterus*).

This is the name now assigned to the Bengal species, the distinguishing feature of which is that the lower breast and abdomen are grey instead of yellow green as they are in the southern form (*C. chlorogaster*). The Burmese form has the forehead yellowish green instead of grey, hence it is sometimes known as *Crocopus viridifrons.*

My reasons for calling all three varieties one species are, first, it is not possible to draw any boundary line defining the distribution of the three species; secondly, most of the green pigeons shot in Northern India do not fit in with the description of any species; they are intermediate forms, race-hybrids.

It comes to this then: the green pigeons of South India usually have the abdomen yellowish green and those of Burma generally have grey bellies, while the birds shot in Northern India ordinarily show both grey and yellow in their lower parts.

The note of the green pigeons is scarcely a coo: it is rather a curious whistle that I find it impossible to describe but which, once heard, cannot be mistaken. Green pigeons feed mainly, if not exclusively, on fruit which they pick off trees. They rarely, if ever, descend to the ground. Their nesting habits are like those of other pigeons. The nest is usually placed high up in a shesham, pipal, mango, or other large tree: it is the usual slender platform of fine twigs, on which two very glossy white eggs are laid.

The *Crocopus* green pigeon does not ascend the Himalayas to any height; the common green pigeon of Himalayan hill stations is the kokla green pigeon (*Sphenocercus sphenurus*). This is the same size as the common green pigeon. The head, neck and lower plumage are yellowish green, the upper back is grey: the rump, wings and tail are mainly olive green. The cock alone has a patch of maroon on the back. The eye is coloured like that of *Crocopus*. The kokla has a very curious call, which some people describe as a melodious whistle. Personally I find it rather disagreeable. In any case, it is distinctive and eludes description. Kokla green pigeons breed throughout the Himalayas from April to July, building the usual pigeon-nest and laying the usual couple of white eggs. The bird is merely a summer visitor to the western Himalayas, returning to the eastern ranges in the autumn.

There is another *Sphenocercus* green pigeon found in the Himalayas, east of Kumaun. This is known as the pin-tailed green pigeon (*S. apicicauda*). It may be recognised at sight by its middle tail feathers, which are two or three inches longer than the others and are pointed at the tip. This bird has the usual habits of pigeons and nests in Cachar during April, May and June. The large thick-billed green pigeon (*Butreron capellii*) is three inches larger than the blue rock-pigeon. Its title to a place among Indian birds is, or was, based on the fact that a single specimen was shot on Elphinstone Island near Mergui.

In my opinion, not one of the imperial pigeons is sufficiently abundant to merit a place among the common birds of India. I shall therefore deal with this branch of the family very briefly. They are termed imperial pigeons on acount of their large size. The smallest of them is three inches longer than the blue rock-pigeon and the largest of them seven inches longer.

The green imperial pigeon (*Carpophaga aenea*) occurs in the forests of the Himalayan terai, Assam, Burma, Central and South India and Ceylon. It is a grey bird, with green wings and tail. The Nicobar race is called the Nicobar imperial pigeon (*C. insularis*).

Hodgson's imperial pigeon (*Ducula insignis*) occurs in Nepal, Sikkim, Bhutan and Assam. It is a large grey bird, washed with lilac on the head and brown on the back and wings. The throat is white. The Burmese race is known as the grey-headed imperial pigeon (*D. griseicapilla*), while that found on the Malabar coast is called Jerdon's imperial pigeon (*D. cuprea*). A black-and-white pigeon, found in the Andamans and Nicobars, is the pied imperial pigeon (*Myristicivora bicolor*).

Finally, we have to glance at the fruit-eating wood-pigeons. These are large pigeons varying in length from 14½ to 16 inches. The author of the *Fauna of British India* describes five species, all belonging to the genus *Alsocomus*. They are, to quote from the *Fauna*, "distinguished by dark colouration and by the prevalence of changeable metallic gloss, usually green or amethystine on a great part or whole of the plumage." Like some of the doves they carry miniature chess-boards on the sides of the neck. The prevailing hue, apart from the sheen described above, is slaty grey or slaty blue.

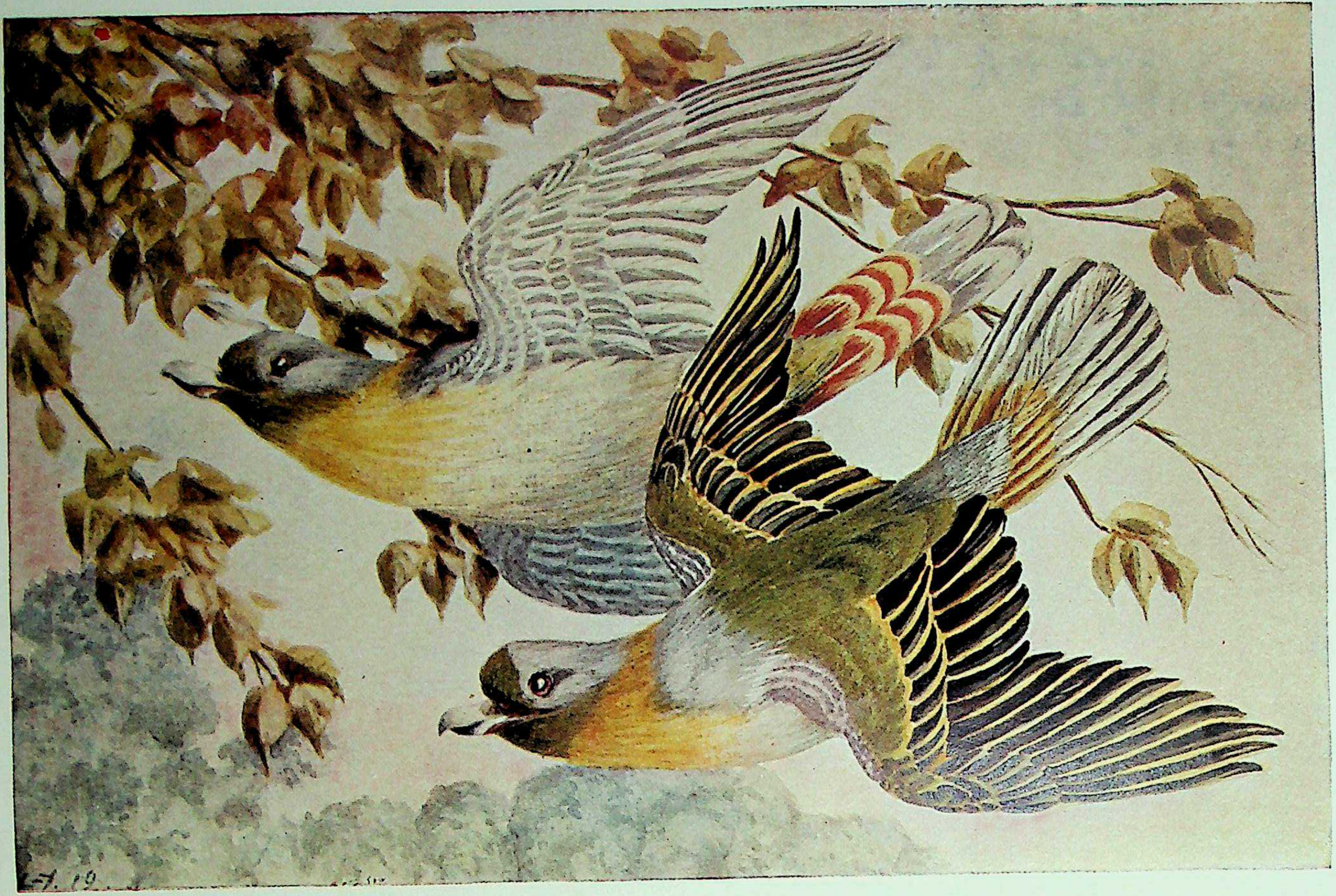
The Nilgiri wood-pigeon (*A. elphinstonii*) is the only pigeon found in the Niligiris at elevations above 5,000 feet. It occurs on all the hill ranges of South India.

The Ceylon wood-pigeon (*A. torringtonii*) is confined to the hill forests of Ceylon.

The ashy wood-pigeon (*A. pulchricollis*) is a denizen of the Eastern Himalayas.

The purple wood-pigeon (*A. puniceus*), which wears a white cap, occurs in Burma, South-East Bengal and Orissa.

Lastly, there is the wood-pigeon of the Andamans and Nicobars, which is known as the Andaman wood-pigeon (*A. palumboides*).



GREEN PIGEON.

PART II.

WADERS AND NON-SPORTING SWIMMING BIRDS.

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NOTE.

In addition to the drawings of Mr. Levett-Yeats this part contains 24 illustrations reproduced from Le Messurier's *Game, Shore and Water Birds of India*. These pictures consist of life-size pictures of heads, feet and feathers and should assist materially the identification of birds as they convey an idea of size which cannot be obtained from an illustration depicting birds in their natural surroundings as Mr. Levett-Yeats does.

THE COMMON BIRDS OF INDIA

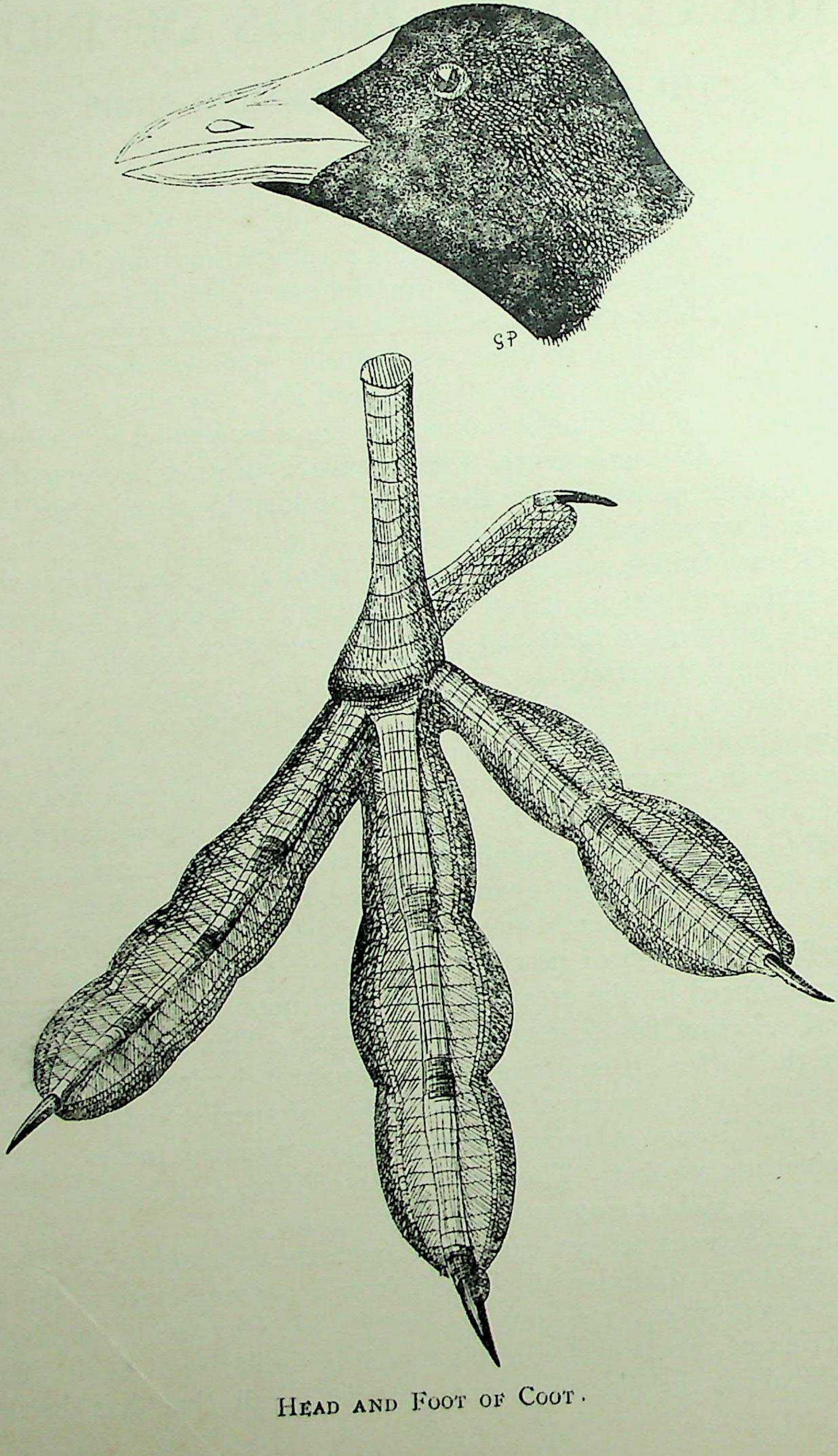
THE NON-SPORTING SWIMMING BIRDS.

We have dealt with the ducks, swans, geese and mergansers. There are many other birds that are quite as much at home in the water as the above-mentioned, but which are not accounted sporting birds. These form our present subject. The descriptions given of them and other non-sporting birds that follow will be of a different nature from those for game birds, because these last are shot and the observer has the opportunity of holding them in the hand and observing them feather by feather. On the other hand, no one but a bird-collector shoots non-game birds; in consequence, I shall endeavour to give such descriptions of these as will enable the reader to identify them when he sees them in their natural surroundings.

Of one of these, namely, the coot (*Fulica atra*), mention has already been made, not because it is a near relative of the ducks, but because it apes the manners of these and is so often mistaken for one of them by inexperienced sportsmen.

Orthodox naturalists are never tired of dilating on the wonders of mimicry in nature. Mimicry, as the term is used by biologists, means similarity in external appearance between two species not closely related to one another. The term includes the resemblance of an animal to a vegetable or inanimate object. The stock example is that of the Kallima butterfly, common in the Himalayas, which, when at rest, bears a close resemblance to a dead leaf. The theory is that the butterfly, on account of its resemblance to a dead leaf, often escapes being devoured by the creatures that prey upon it, and that therefore natural selection has developed the likeness. This is putting the cart before the horse. It is wrong to say that natural selection brings about the resemblance. So great is the number of species and so plastic are they that it is not surprising that widely separated forms sometimes resemble one another. There are cases of birds that inhabit different parts of the globe being as alike as two pins.

In such cases neither can profit from the resemblance. The coot does not appear to derive any benefit from its resemblance to the duck; on the contrary, many a coot has lost its life because it has deceived inexperienced sportsmen. In this case it is similarity of habits that has brought about the likeness. The coot is a rail that has become a swimming bird and which, instead of skulking among reeds, as the rest of its family do, lives on the open water. More will be said about it when we discuss the rails.

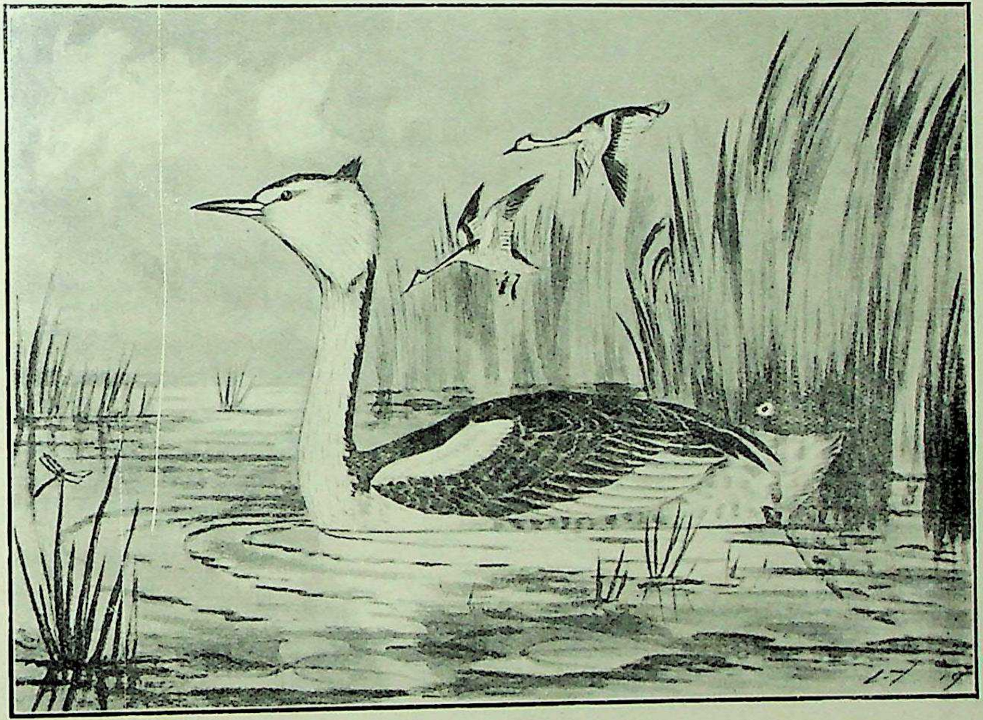


HEAD AND FOOT OF COOT.

I.—Grebes.

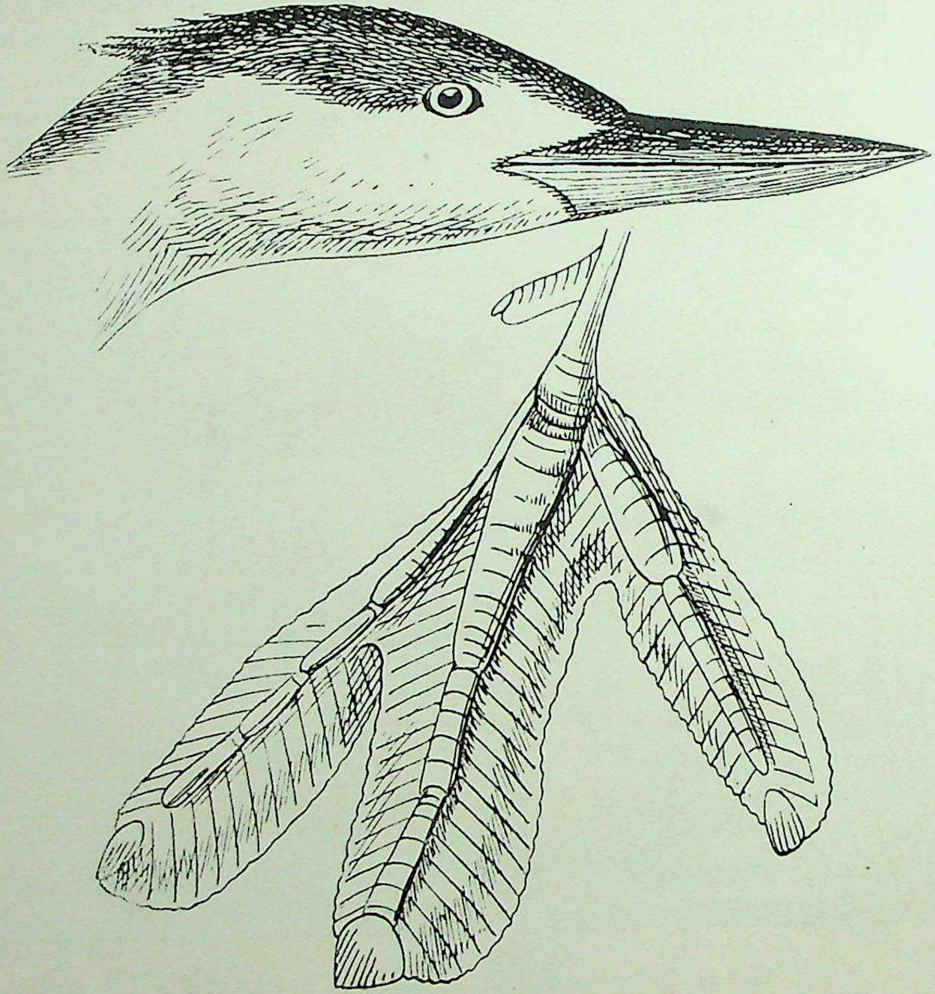
Let us now consider the grebes, which have many of the habits of ducks.

The great-crested grebe (*Podicipes cristatus*) occurs both in Europe and Asia. In winter, it is found on most of the big *jhils* in Northern India. It keeps to open water and is often seen near a flock of ducks. It obtains its food entirely by diving. It can swim very fast under water. When hustled, it takes to its wings. Like the coot, it experiences some difficulty in rising; it has to run on the surface for some yards, flogging the water with wings and feet, before it can rise. Once on the wing, it flies strongly but never soars high over the water as ducks and coot do. When on the wing, its long neck, slender-pointed bill, and the feet projecting behind the tail prevent its being mistaken for a duck. When flying, its wings are seen to be black and white and its body looks black. When it moves about on the surface of the water, the greater part of the body is submerged; in other words, it swims low. It carries the long neck upright and from a distance looks somewhat like a cygnet; this resemblance disappears on closer inspection. The pointed bill and the short "horns" formed by the black bifid crest



GREAT CRESTED GREBE (PODICIPES CRISTATUS).

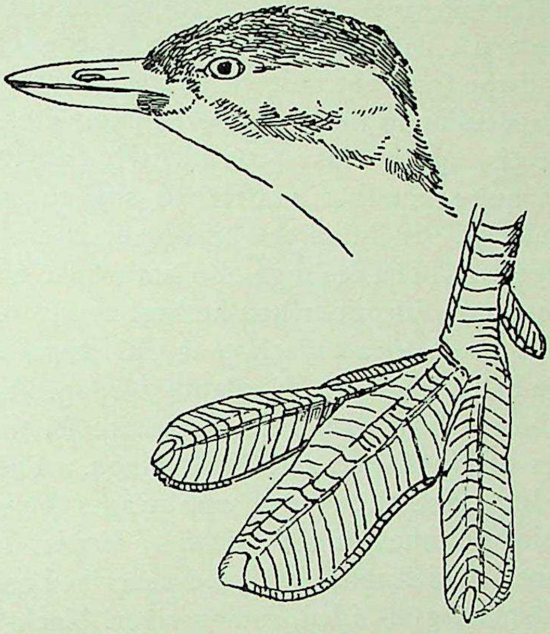
are very distinctive. The hind toe of the grebe is like that of a diving-duck. The three front toes are lobed like those of the coot, with this difference, that the lobes are not constricted at the joints of the toes. The plumage of the crested grebe is white, save for the crest described above, the brown hind neck, and some black on the forehead and wings.



HEAD AND FOOT OF GREBE.

The little grebe or dabchick (*P. albipennis*) is a permanent resident of India and is found on most *jhils* and ponds. This bird is not much larger than a myna. It looks like a diminutive brown teal that has lost its tail. It seems never to come on to dry land and it does not fly very often. It is, perhaps, the most aquatic bird in existence. The chin is white, as is the abdomen, and there is some chestnut on the sides of the head and the neck. The remainder of the plumage is dark brown.

The third grebe found in India is intermediate in size between the two that have been described. It has a white breast, and the chin and throat are mixed black and white. There is a broad, dark band between the throat and the breast. It is known as the eared grebe (*P. nigricollis*). It occurs chiefly on salt water and, except in Sind, is a rare bird.



HEAD AND FOOT OF DABCHICK.

II.—Terns.

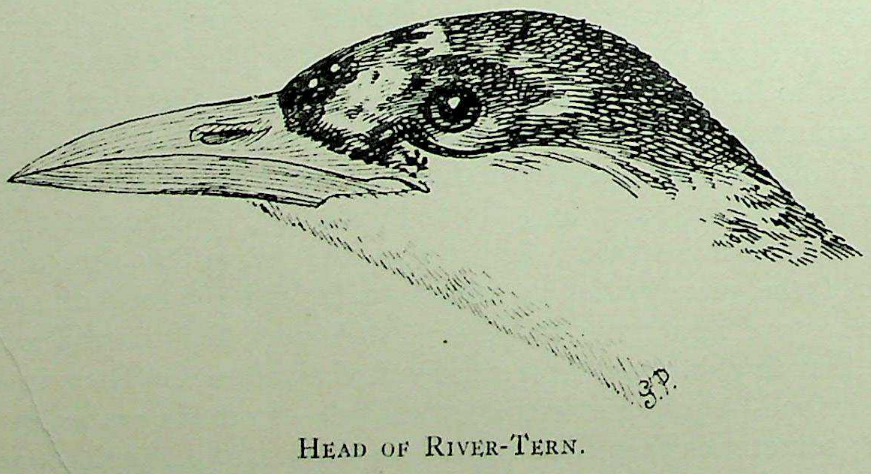
The terns now claim our attention. In these the three front toes, like those of ducks, are joined by a web, but the hind toe is small (wanting in some forms) and raised above the plane of the front toes. It appears to be of no use to the bird. Owing to the want of this toe a tern cannot perch on a bough and it is a poor walker; it takes very little walking exercise. Notwithstanding the webbed feet, terns very rarely swim on the water as gulls and ducks do. When not resting on a sandy islet in midstream, they fly to and fro a few feet above the surface of the water catching insects after the manner of swallows, hence terns are sometimes called sea-swallows. It is hardly necessary to state that terns are not near relatives of swallows. They frequently pick their food—aquatic insects or small fish—from the water, swooping on to it; sometimes they dive right into the water after the manner of kingfishers. So neatly do they secure their prey that the feathers of the head seldom get wet. Terns are among the most beautiful of God's creatures. The beauty of their form is perfect. Their shape is a dream of comeliness and their movements are the poetry of motion.

The body is usually white and the long pointed wings are pearly grey. The bill and legs are often red or bright yellow.

Wherever there is a river or lake in India, there will you see terns. You cannot mistake a tern; the slim white body the long racing wings, the easy flight and the frequent descent to the water are a combination of characteristics peculiar to these feathered exquisites.

Although it is quite easy to identify a tern as it flies overhead, it is quite another matter to say to what species the particular bird belongs. In India the bird-lover is embarrassed by the vast number of species. The feelings of a naturalist, accustomed to the out-at-heels avifauna of Europe, when he first comes to India, are akin to those of a child taken to a toy shop at Christmas time and told to choose the toy he likes best. In England, we speak of the cuckoo, the kingfisher, the starling. In India there are 29 different kinds of cuckoo, 18 species of kingfisher, and 29 starlings. There are no fewer than 19 terns in India and the reader who wants full information is referred to the bird volumes of the *Fauna of British India* Series. Of these, 19, there are 6 which may fairly be described as common birds: the whiskered, Caspian, gull-billed, Indian river, black-bellied and little tern. Most species are about the size of a pigeon, but, of course, very different in shape. The little tern is no larger than a bulbul, while the Caspian tern is as big as a duck. A tern with a black head, not much larger than a sparrow, is the little tern (*Sterna minuta*). The Caspian tern (*Hydroprogne caspia*) is marked by its large size and its massive, bright-red bill.

The Indian river tern (*S. seena*) is, perhaps, the most abundant of the terns and is marked by the black cap, the bright-yellow bill and by the fact that the outer feathers of the tail are nearly six inches longer than the middle ones, forming a very conspicuous fork.



HEAD OF RIVER-TERN.

The gull-billed tern (*S. anglica*) has a black bill and feet, but very little black in the plumage. As it flies, it appears to be a white bird.

The black-bellied tern (*Sterna melanogaster*) is very easy to identify, being the only one of which the under parts are black during the winter months. It is very common on the tanks of northern India.

The Indian whiskered tern, or small marsh tern as Jerdon calls it, (*Hydrochelidon hybrida*) has a red bill, a black spot in front of the eye and a black band behind the eye. The rest of its plumage is grey or white in winter. In the hot weather the whole head and the abdomen become black. In the hot weather it is not very easy to tell the difference between the black-bellied and the whiskered tern, when these birds are flying over a tank. The whiskered species, however, is smaller, being ten inches long as opposed to the thirteen inches of the black-bellied tern. The bill of the latter is yellow and that of the whiskered tern is red. Thus, it is possible to distinguish between these two birds even in summer without shooting them.

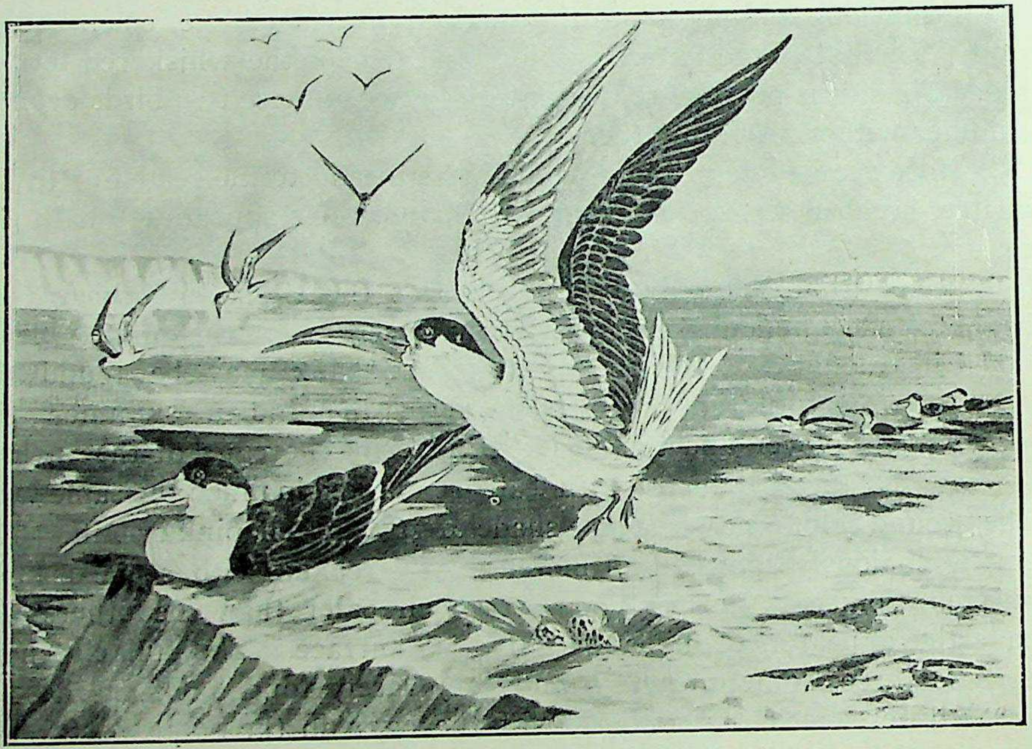
More detailed description would be as boring to the reader as to the writer, because terns, like wagtails, change their appearance with the season.

Terns usually live singly, but towards the end of February they begin to collect in flocks on sand islets in rivers, where they mate. They breed in colonies. Often on the same sandbank may be found the eggs of four different species of tern, the Indian skimmer, the spur-winged plover and the swallow-plover. The eggs of the various species are difficult to distinguish—all are marked in much the same way. The ground colour may be a pale shade of grey, green, pink or buff. The egg is copiously spotted and blotched or streaked with sepia or inky purple. Some of the markings are much paler than the others and have the appearance of being below the surface. The full clutch of eggs is three, sometimes two and very rarely four. Often there is great difference in the colouring of the eggs in the same nest. The eggs are laid on the bare sand in a slight saucer-shaped depression. Scores of nests are often to be seen on one sandbank. A most entertaining morning may be spent on any such sandbank in the month of April. As soon as the observer lands, the nesting terns fly just over his head and utter their shrill plaintive cries. If they do not act thus, there is no need to look on that part of the bank for eggs, for it will contain none. During the daytime terns do not appear to sit on their eggs at all. They rely on the heat of the sun to do the hatching; indeed, so powerful are the rays of the sun, that it is a wonder that the eggs do not get *cooked*; they are often too hot to handle with comfort! By night every egg is covered by its owner and, when it is dark, the birds sit so closely that Hume declares it to be possible to catch them in a butterfly-net!

The above remarks do not apply to the Caspian tern, which nests by the sea, or to the whiskered tern which breeds in the rains among the reeds and floating water plants of *jhils*. Thousands of these terns breed on the lakes of Kashmir and Oudh. The nest is a floating raft made of reeds or straw, on this three eggs are laid: these are pale green speckled with brown and pale purple.

Why this tern should have departed from the nesting habits of all its near relatives is a question that has not yet been answered.

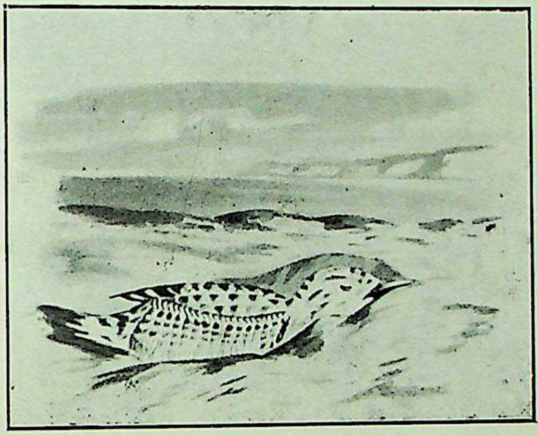
The Indian skimmer or scissors-bill (*Rhynchops albicollis*) is a near relative of the terns. This very extraordinary bird is found on most of the large rivers of India and is particularly common at Ghazipur, on the Ganges. The skimmer is sixteen inches long, being thus a little smaller than the largest tern. The bill of this bird is a unique structure. Except at the tip, where it is horn-coloured, it is of a bright-red hue. It is much flattened laterally; the upper mandible, which is three and a half inches long, is an inch shorter than the lower one, which is very flexible and makes a good paper-knife. The tail, the whole of the lower parts, the forehead, the cheeks and a collar at the back of the neck are white, the rest of the plumage is blackish brown. This bird is called the skimmer because of its habit of flying just above the surface of the water, so close to it that it is a marvel that the tips of its long wings



SKIMMERS (RHYNCHOPS ALBICOLLIS.)

never touch the water. When it is thus scouring the surface, the bill is carried wide open with the tip of the lower mandible immersed in the water, cutting through it just as the nose of a destroyer does. Cut-water would be a better name for the bird than skimmer. Every now and then the head is jerked down and the mandibles meet with a snap to close upon a tiny fish which is usually swallowed at one gulp. You cannot mistake a skimmer: it is the only bird in India that has this habit of flying with the bill in the water.

Skimmers nest on sandbanks in rivers along with the terns, and lay four eggs, much like those of terns except that the markings are usually bolder. The nest is just a depression in the sand, usually shallower than that of a tern. Baby skimmers are very sluggish and invariably feign death when handled.



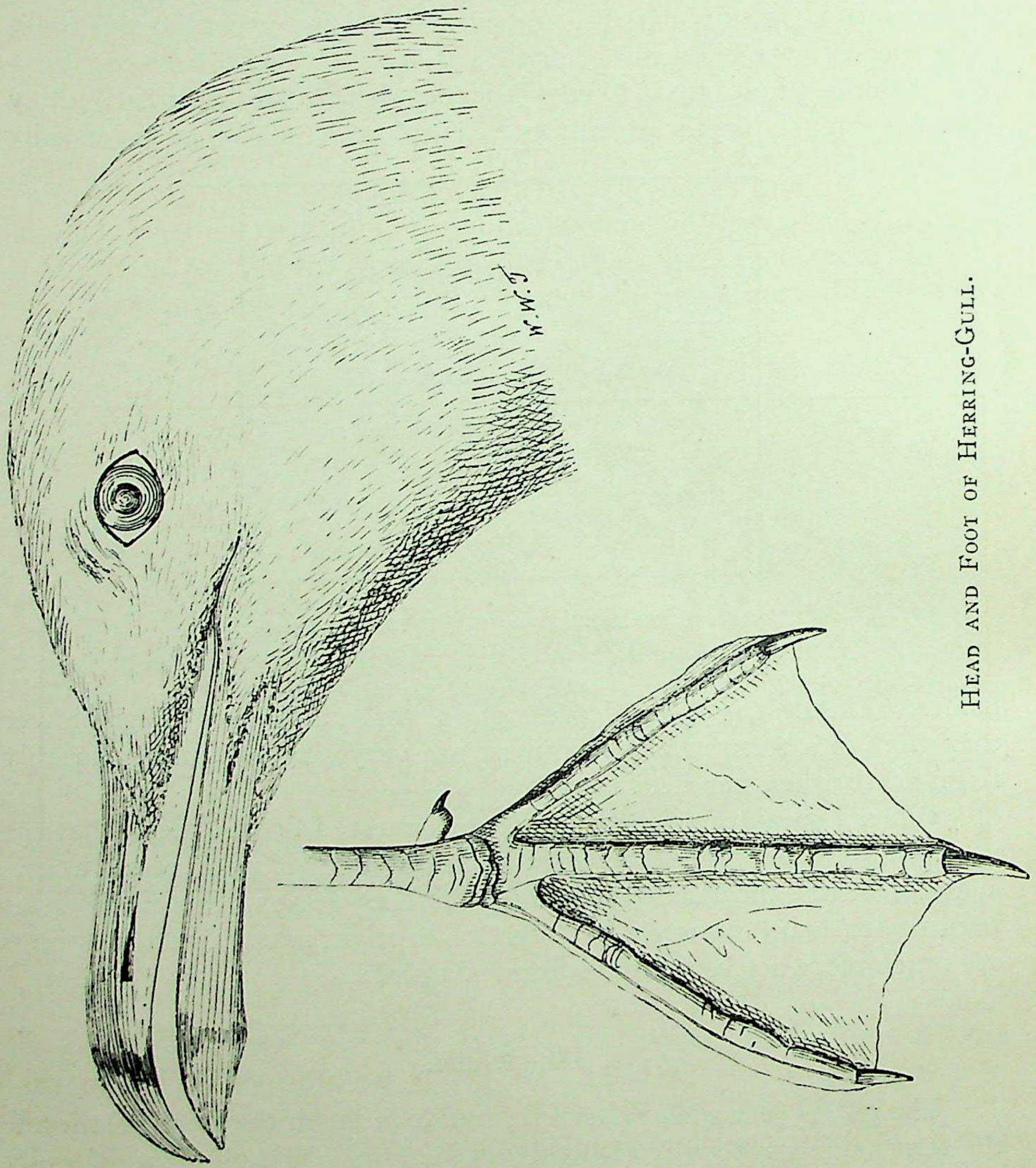
YOUNG SKIMMER IN CAVITY IN SAND, FEIGNING DEATH TO ESCAPE DETECTION.

When I speak of feigning death, of course, I do not mean that the young birds deliberately pretend they are dead. They have no knowledge of death, and if they had they do not possess the intelligence requisite to make pretence in order to deceive man. Tern nestlings are much more active than are young skimmers.

III.—Gulls.

The gull is just a heavy tern; it stands in much the same relation to the tern as a barndoor fowl does to a bantam. The plumage of gulls, like that of the terns, is mainly white and pearly grey. The several species resemble one another closely and are always changing their appearance.

I shall, therefore, not attempt any detailed description: those who love these dry bones of science are referred to the bird volumes of the *Fauna of British India* Series, which, by the way, are perhaps the best systematic bird books in existence. They are now out of print, and the Secretary of State for India is bringing out a new edition, but alas! the whole terminology is being changed, with a result that the field naturalist will be put to great annoyance. He has already suffered over much at the hands of the pedant! The only gull that ventures far inland in very large numbers in India is the yellow-legged herring gull (*Larus cachinnans*). One or two specimens of this are likely to be seen on most large *jhils* in India. The brown-headed gull (*L. bruneicephalus*) sometimes occurs on rivers. Of the gulls that frequent the coasts of India, perhaps, the commonest is the laughing-gull (*L. ridibundus*).

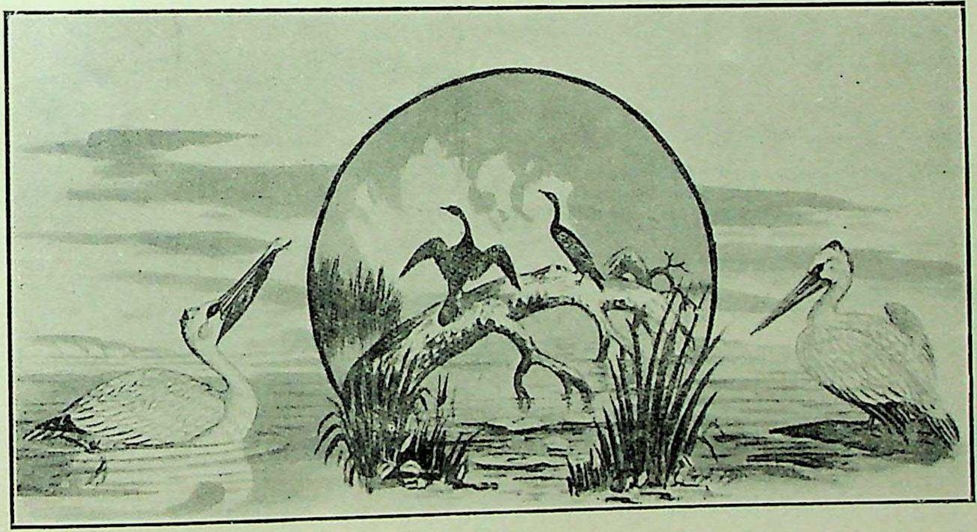


Head and Foot of Herring-Gull.

The ugly brown gull seen in such numbers in the Red Sea is the sooty gull (*L. hemprichi*). This bird occurs on the coast of Sind. Gulls feed chiefly on dead fish and garbage floating on the sea or washed up on to the shore. At Madras they squabble with the crows for the tiny fish thrown away by the fishermen. Inland, gulls feed largely on insects and worms, but an egg or a young bird does not come amiss.

IV.—Pelicans.

Before taking leave of the web-footed birds, mention must be made of the pelicans and cormorants. These are peculiar in that the hind toe points forwards, and this and the three front toes are connected by a web. It is not necessary to describe a pelican. Which of us has not watched with admiration these birds in the Zoo, scooping up fish with their elastic-pouched lower jaw? A party of pelicans fishing in the wild state is a sight for the gods. They line up, one or two deep, across a belt of water and then advance, beating the water with their wings. Thus they drive the frightened fish to shallow water, where they scoop them up much as a bank-clerk scoops up sovereigns. Four species of pelican occur in India. They are as like one another as the figures of human beings in a Noah's ark are, so that it is almost impossible to say to which species a specimen belongs without examining it closely and measuring it with a foot-rule.

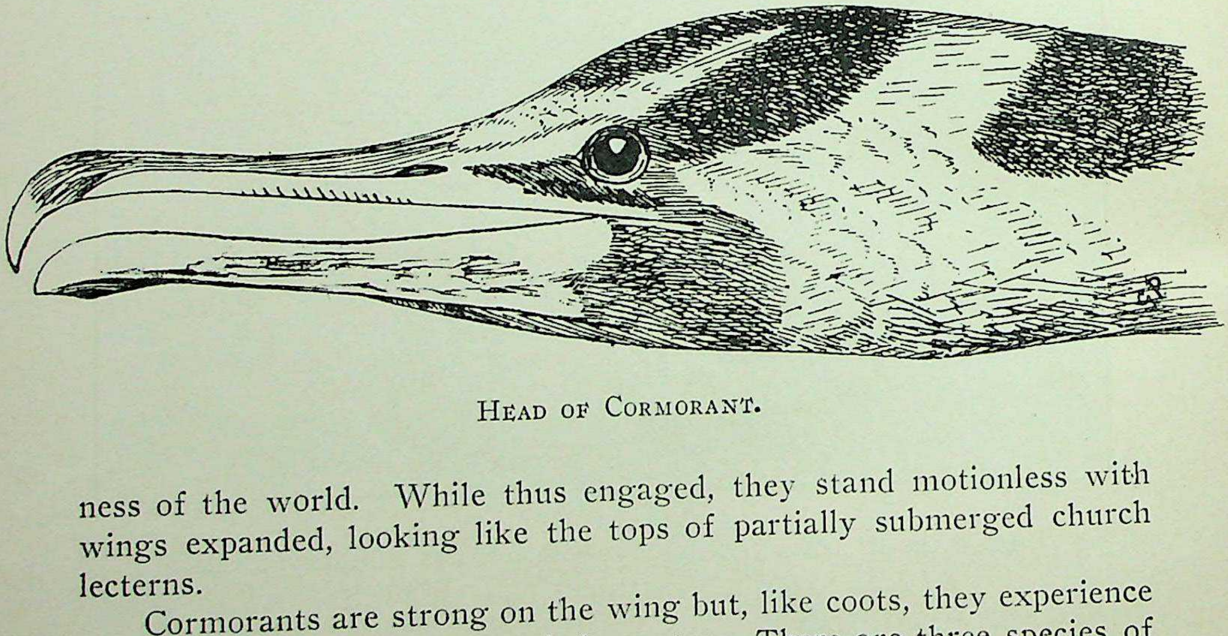


PELICANS (P. PHILLIPINUS) AND CORMORANTS (PHALACOCORAX JAVANICUS.)

V.—Cormorants.

Cormorants occur much more abundantly in India than do pelicans. These great, black, fishing birds are to be found on most big *jhils* and sheets of water in India. They live on fish, which they capture by diving. Now a fish in the water takes a lot of catching! Until you have witnessed cormorants diving for fish in the glass tank at the Zoological Gardens in Regent's Park, you cannot appreciate the pitch of excellence to which the cormorant has brought the art of swimming under water. The heathen Chinee takes advantage of this proficiency and makes cormorants fish for him. He ties a line to the bird's leg, winds a ring of twisted straw round its neck, and then sends it into the water after fish. The unfortunate bird cannot swallow its quarry owing to the ring round its neck, so it has to disgorge when pulled back into the boat. To prevent the bird from sulking, the master gives it a fish now and again after a capture.

After having partaken of a meal of fish, cormorants fly to any convenient post, there to digest their food and ponder over the wickedness of the world. While thus engaged, they stand motionless with wings expanded, looking like the tops of partially submerged church lecterns.



Head of Cormorant.

Cormorants are strong on the wing but, like coots, they experience some difficulty in rising out of the water. There are three species of cormorant in India—all as black as crows. The commonest is the little cormorant (*Phalacocorax javanicus*). This bird is particularly abundant in the neighbourhood of Madras. It breeds during the south-west monsoon in northern India and in the south-east monsoon on the Madras side. The nests are platforms of sticks placed in low trees, often on an island in a lake. The eggs are pale green. The large cormorant (*P. carbo*) is also fairly abundant. Between these two comes the lesser cormorant (*P. fuscicollis*). This seems to occur chiefly in Sind and Burma. It, like the little cormorant, has twelve tail-feathers, while the big species has fourteen. No matter how much the naturalist conjures with the name "Natural Selection," he will be hard put to it to explain why two of our Indian cormorants get along very nicely with twelve tail-feathers, while the big one needs fourteen.

The Indian darter or snake-bird (*Plotus melanogaster*) must be familiar to all who shoot duck. This bird is half cormorant, half heron. Cover up the head and neck and you think you have a cormorant. Leave only the small head and long slender neck exposed, and you imagine you are looking at a heron. This species is to be found on most *jhils*. It feeds on fish, which it catches by diving from a perch like a kingfisher, or from the surface of the water like a cormorant. Often the snake-bird swims with only the head and neck showing above the surface, like the periscope of a submarine. After a meal the bird assumes the lectern-like attitude of cormorants. It is a good flier and, when on the wing, carries the neck stretched out and has then a queer appearance, looking as though it had exchanged head and neck with a bird of much thinner build than itself. Its nest is like that of the cormorant, in the company of which it often breeds.

NON-PERCHING WADERS.

I.—Water-Plovers and Rails.

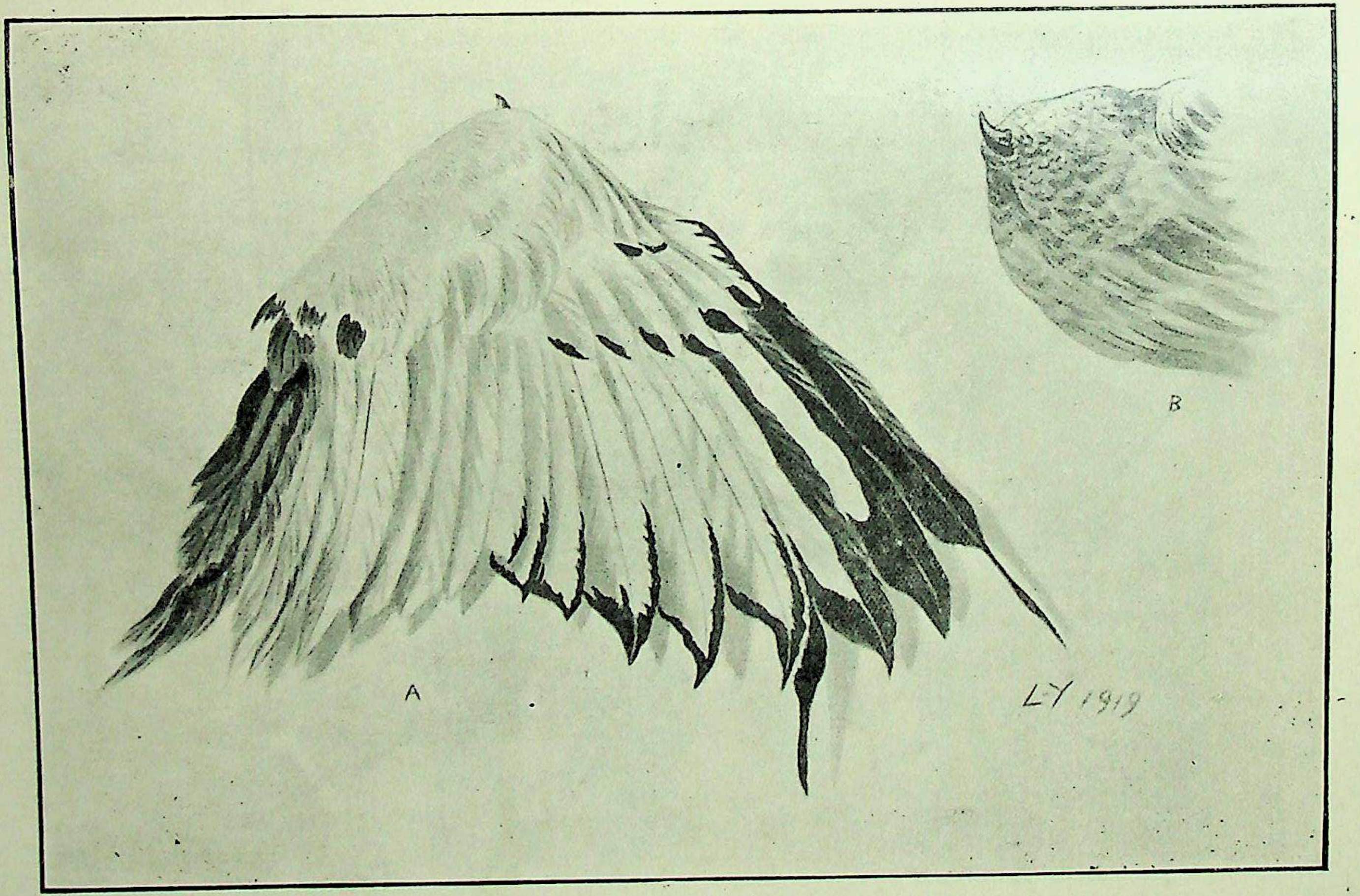
We have discoursed upon the sporting and the non-sporting swimming birds. There is a host of other water-fowl, many of which are entitled to a place among the common birds of India. These form a heterogeneous crowd, hence it is not an easy matter to know how to group them for descriptive purposes. After some consideration I have decided to make four classes of them: I.—Water-Plovers and Rails. II.—Plovers and Sandpipers. III.—Cranes and Flamingoes. IV.—The Perching Waders—Storks, Ibises and Herons.

In this chapter we will notice the more important members of Class I.

The birds I have termed water-plovers are usually called jacanas, which is the Spanish name for them. These remarkable birds are to be found on most of the lakes in the tropics and sub-tropics of Asia, Africa and America. They belong to the family *parridæ* and two members are common in India. These are the pheasant-tailed jacana or water-plover (*Hydrophasianus chirurgus*) and the bronze-winged species (*Metopodius indica*).

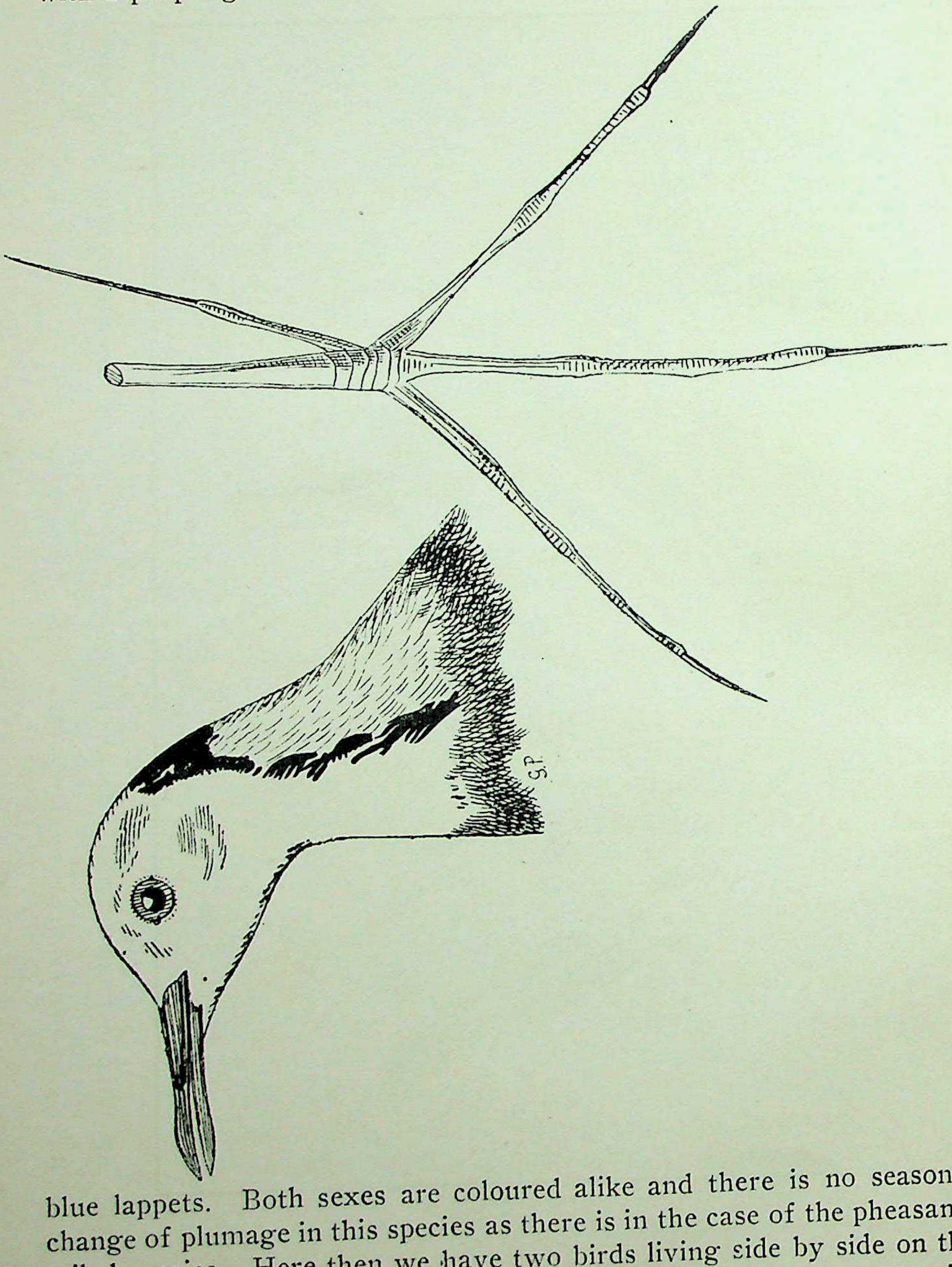
Every one who has shot duck in India, must have heard emanating from the reeds, curious calls, not unlike the mewing of cats. These calls are the notes of the water-plovers. As the boat that carries the gunner progresses, the occupant must have noticed small birds, about the size of pigeons, get up well within range and fly off, uttering, as likely as not, a mewing call. These are water-plovers. One is a light coloured bird and the other dark. If the sportsman be observant, he may have noticed that these birds carry their legs pointed backwards when flying and these are so long as to project behind the tail.

If you look at the bird through field-glasses, you will see that in the pheasant-tailed species the crown and upper plumage are brown, that there is a black band running through the eye down the neck and then turning forwards to form a black gorget. Behind this, running down the neck, is a yellowish brown band. The lower plumage is white. The wings are white, with narrow black edges. The tail is short; you will, therefore, wonder why the bird is said to be pheasant-tailed. If, however, you repair to the *jhil* in the rains, you will cease to wonder, for then both the cock and the hen have a long pheasant-shaped black tail. The head is then white and the black band runs from the nape down the side of the neck and the yellowish brown band has become bright golden.



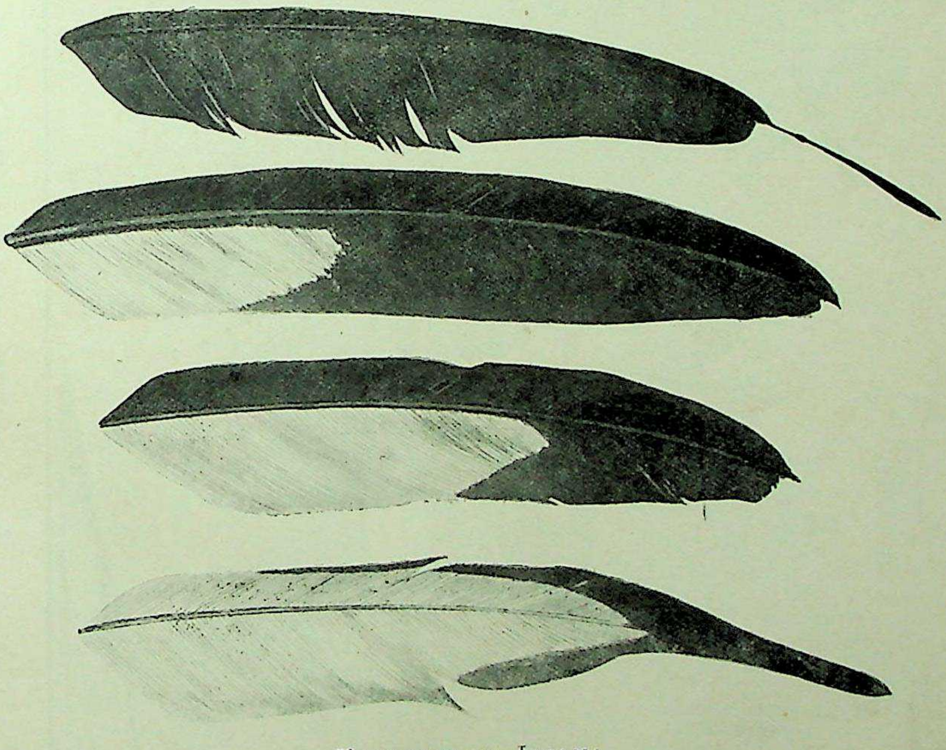
A. Wing of Pheasant-tailed Jacana from above. Note spur and curious shape of first and fourth primaries.
B. Under-side of wing showing spur.

In the case of the bronze-winged jacana, the prevailing hue of the plumage is rich dark green with a beautiful gloss, which is purple on the upper back and bronze on the wings. The lower back is maroon with a purple gloss. There are conspicuous white eyebrows and dark blue lappets. Both sexes are coloured alike and there is no seasonal change of plumage in this species as there is in the case of the pheasant-tailed species. Here then we have two birds living side by side on the same *jhil*, and of which the habits are identical, yet one adopts a special nuptial plumage, while the other does not. This is a phenomenon



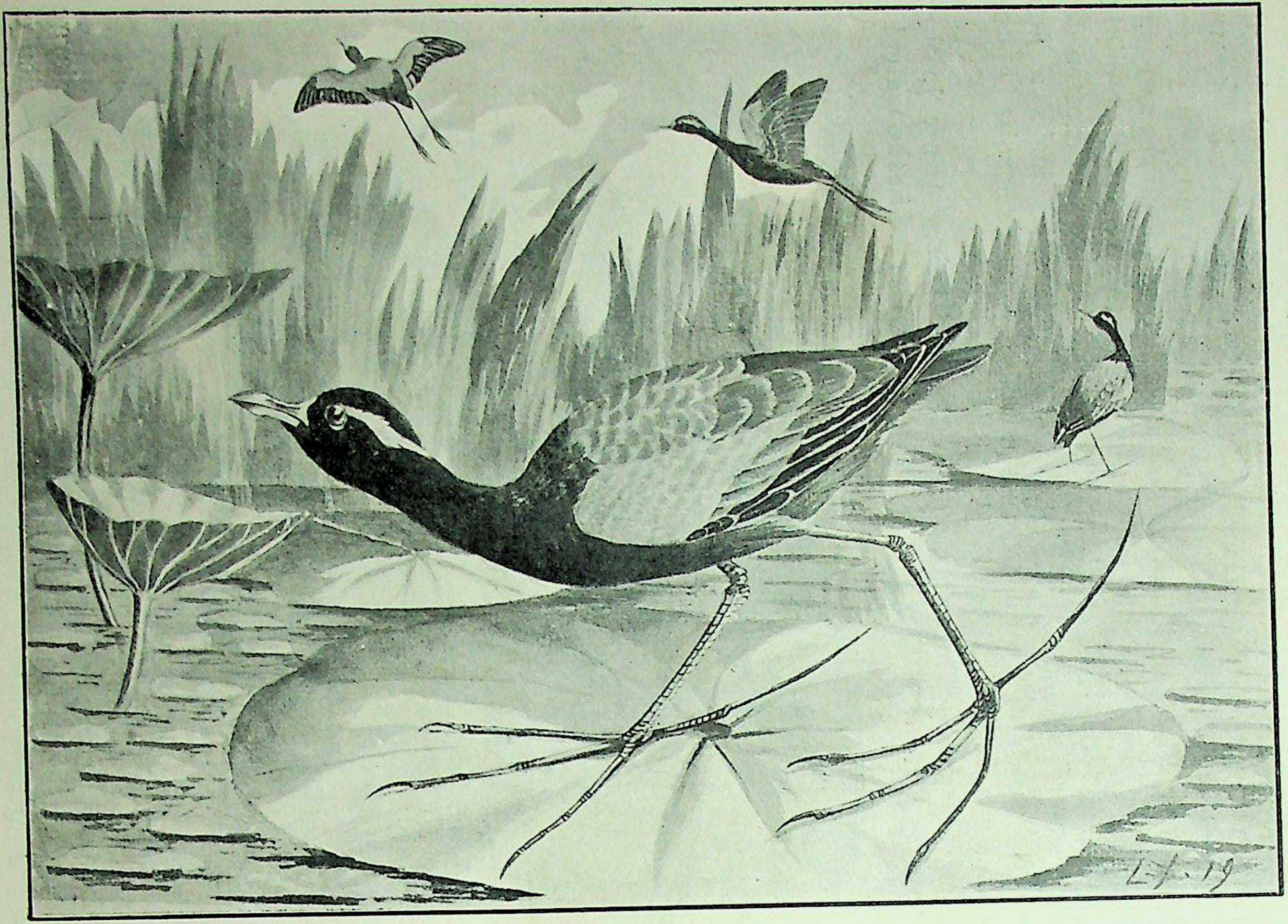
HEAD AND FOOT OF JACANA.

which the biologist has not been able to explain: for this reason jacanas are left severely alone by those scientific men who write on sexual selection and protective colouration! The most extraordinary thing about these birds is their long toes. The birds are smaller than pigeons, nevertheless, the hind toes and claws are nearly four inches in length, while the three front toes are well over three inches. Owing to the extravagant length of their toes these birds are able to run about on the broad floating leaves of lilies, lotuses and other water plants as easily as an ordinary bird can run on *terra firma*; for this reason they might well be called lotus-birds or lily-trotters. But they can, and often do, ride the water like ducks. The pheasant-tailed species looks a fine object on the water after it has grown its long tail. This is raised above the water in a beautiful curve. Water-plovers are more aquatic even than duck; they do not often come on dry land. Their nests are floating rafts, and as often as not their eggs are partly immersed in the water!



FEATHERS OF JACANA.

Take a cloudy day in the rains and spend the morning on some large *jhil* where there is plenty of vegetation and you will enjoy the experience. You will almost certainly find nests of these and other water birds. Both kinds of water-plover build the same kind of nest—a tangle of rushes which may float like a raft, or may be tethered to some plant or floating object, or may be on a tiny islet in the middle of the *jhil*. You may find the nests of both kinds on the same *jhil*, but in that case they

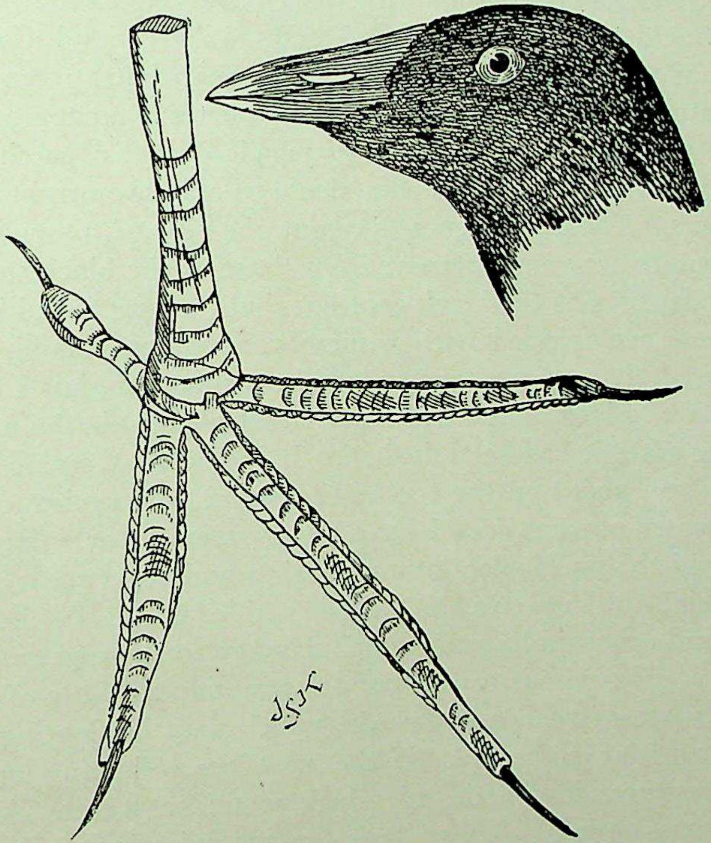


Bronze-winged Jacana (Metopodius indica).

usually divide off the *jhil* into two spheres of influence, as there is some rivalry between the two species. The eggs of the two kinds of jacana are easily differentiated. The pheasant-tailed species lays four peg-topped-shaped eggs of a rich olive or bronze hue without any markings. Those of the bronze-winged jacana are more or less covered with markings which look like Arabic inscriptions.

Both species are found all over the plains of India, except the Punjab, where only the pheasant-tailed species occurs. The bronze-winged bird is likely to be seen on the lakes of the Botanical Gardens at Sibpur and the pheasant-tailed species is said occasionally to pay the gardens a visit.

Another bird that is to be seen on most lakes in India is our familiar English friend, the moorhen (*Gallinula chloropus*). This bird is found all over India, but is not nearly so common as are the water-plovers, and, being of very retiring habits, is apt to elude observation where it does occur.



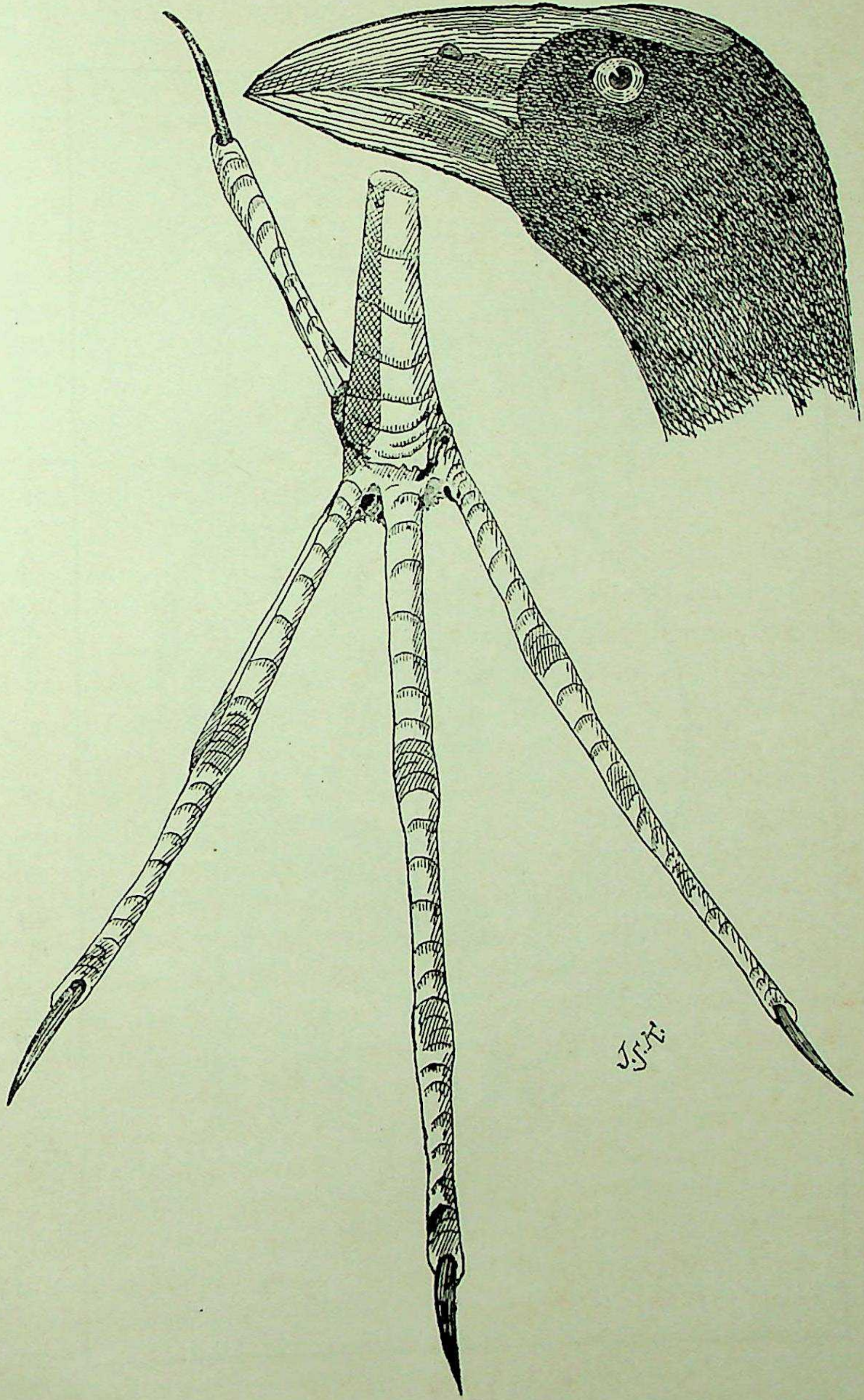
Head and Foot of Moorhen.

An olive-brown bird, not very much larger than a myna, with some white in the posterior part of the body and a conspicuous red shield on the forehead—a bird that haunts the reedy margins of *jhils* and swims to cover with jerky movements when it perceives that it is being observed can be none other than the moorhen. This bird has normal toes and can run well on land. When it runs it cocks up its tail, causing the white under-parts to be very conspicuous.

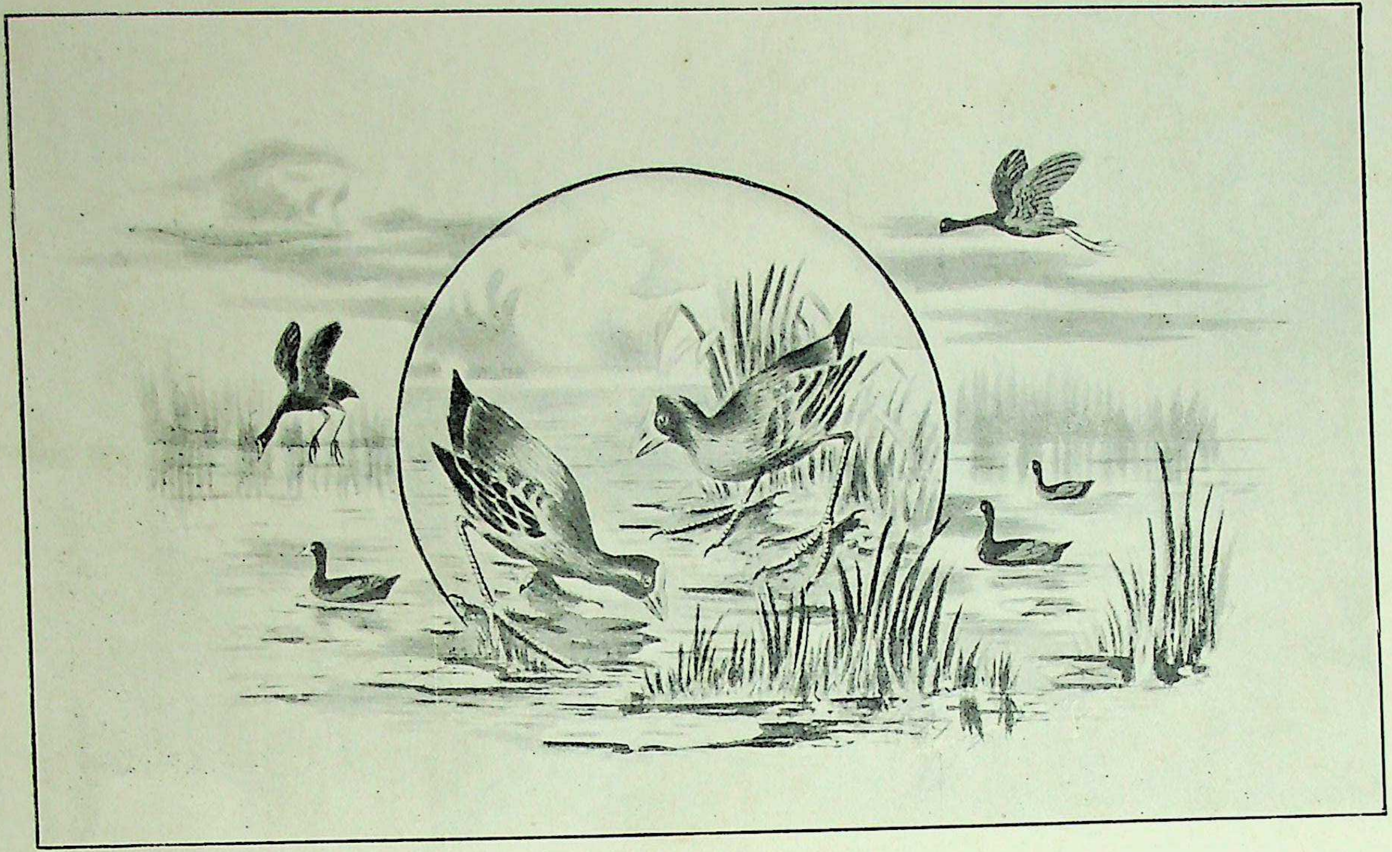
The moorhen breeds in August and September. To make a receptacle for the eggs, fourteen or fifteen stems of wild rice are bent down to form a sort of cup. In this a goodly number of eggs is laid, sometimes as many as nine. These are usually stone-coloured or pinkish, with brownish red spots. Occasionally the bird makes a collection of rushes and straws and with these builds a nest in some bush growing in the lake.

One of the most beautiful birds found on our Indian *jhils* is the purple coot or moorhen, as Blanford calls it. The scientific name is *Porphyrio poliocephalus*. This bird, as I have remarked elsewhere, is one that should appeal strongly to Messrs. Liberty and Co., being a study in shades of art blue. Purple, lilac, cobalt blue, greenish blue all preponderate in one or other parts of the purple plumage of this bird. The whole plumage is some shade of purple except a patch under the tail which is white. The bill and a shield of skin are bright red, as are the long legs. The purple coot is about the size of a small whistling teal. Its habits are very different from those of the black coot. It has no lobes on its toes as the black coot has, but its long toes, like those of the moorhen, are fringed with a membrane which should enable the bird to swim. It may perhaps swim like a moorhen, but I have never seen it do so. Indeed, I have never seen a purple coot in the open, except on the wing after it has been flushed. It is said that, owing to its long toes, it can run about on the top of the broad floating leaves of water plants as water-plovers do. I have never seen it act thus. I have always found the purple coot among rushes and stout reeds to which it clings in much the same way as a reed-warbler does. Its diet is chiefly vegetable and it is said to cause much damage to the rice crops. It has a harsh cry. The nest is of the same description as those of the water-plovers—a mass of rushes and reeds, which may be floating or on the ground on an islet in the *jhil*. If the nest be a floating one, it is a massive structure, four-fifths of which is under water. As many as nine eggs may be laid. These have the ground colour pale pink, very prettily marked, especially at the broad end, with lines and spots of crimson lake; in addition to these there are some pale purple blotches and clouds which appear to be below the surface of the shell. July and August are the months in which most eggs are found in Northern India. If a person be fortunate he may find on the same *jhil* on the same day eggs of all the birds described above.

One of the commonest water-birds in India is the white-breasted water-hen (*Amaurornis phœnicurus*).



Head and Foot of Purple Moorhen.



(Porphyrio poliocephalus) Purple Moorhen and (Fulica atra) Coot.

This bird is found not only in large tanks, but, like the paddy bird it is quite content to dwell in the smallest village pond, provided this affords the least cover to which it can resort when alarmed.

It is about the size of a crow, but has much longer legs. The upper plumage is dark slaty grey, tinted with green—seen from a distance it looks black. In sharp contrast to this is the white forehead, face, front of neck, breast and belly. There is a chestnut patch under the tail; as this organ is often carried aloft the chestnut patch shows up well. The long legs are yellowish green. The bird feeds on the ground and among rushes to which it is able to cling with ease, thanks to its long feet. This bird is often found some distance from water. Although it dwells near human habitation, it objects strongly to being looked upon by man, and walks away hastily with tail erect whenever it knows you are watching it. This bird nests in the rains, when it becomes exceedingly noisy. Hume thus describes the uproar made by water-hens in September—some half-dozen of these birds were breeding near his house at Bombay which was surrounded by low-lying fields. "Any thing more unearthly proceeding from the throat of a bird I never heard. It began with loud harsh roars which might have been elicited from a bear by roasting it slowly over a large fire, then suddenly changed to a clear note repeated like the coo of a dove. Often in the morning two or three of these birds might be seen in some little open space, fighting like young cock-chickens."

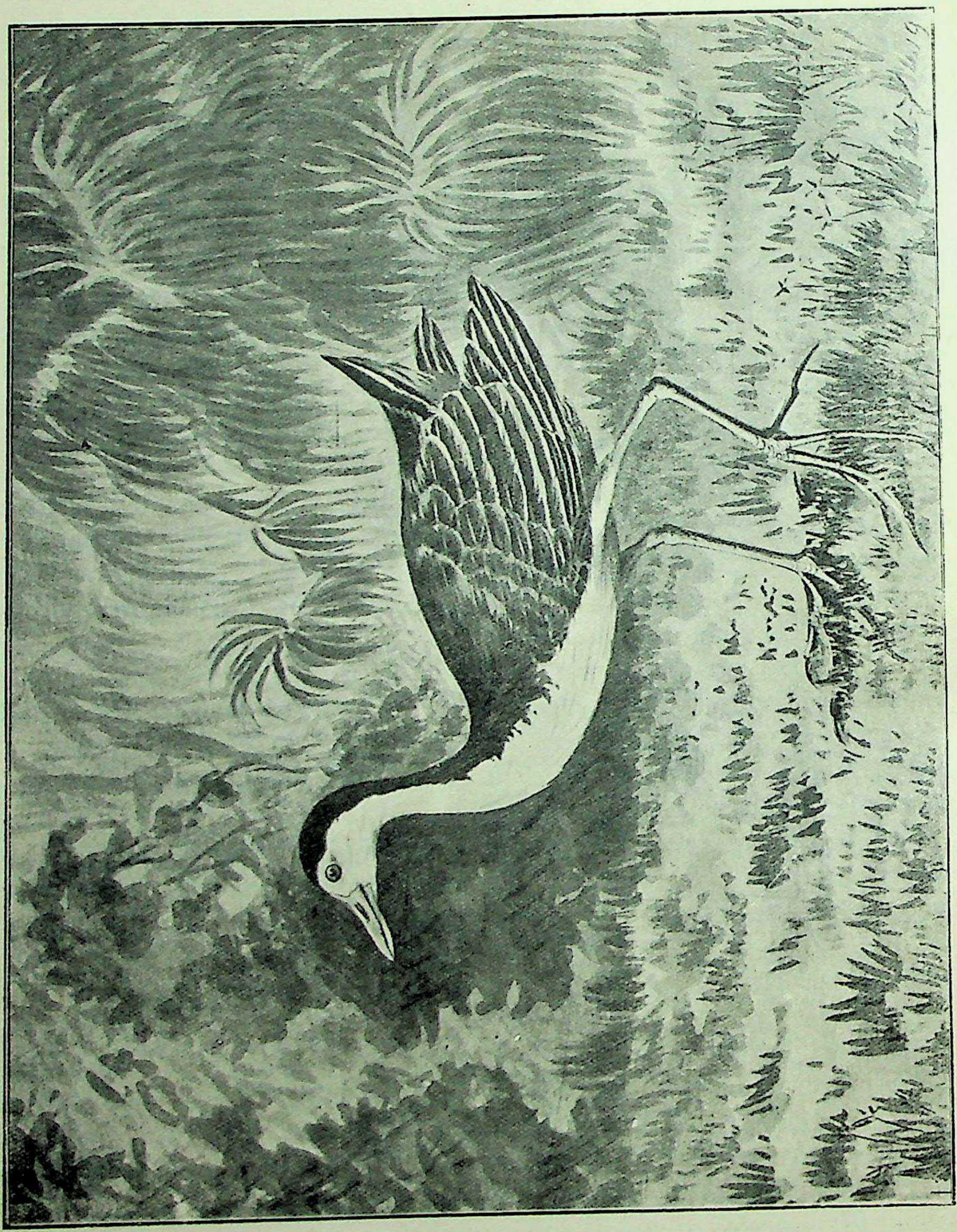
The nest is sometimes on the ground in rushes, more often in trees or bushes standing in water. The nest is a platform of twigs, rushes and grasses—occasionally the disused nest of another bird is utilised.

Young water-hens are pretty objects and swim well, when they look like fluffy black ducklings.

A small relative, about the size of a myna, of which the under-parts are chestnut instead of white, which is fairly common in the pools round about Calcutta, is the ruddy crake (*Amaurornis fuscus*).

II.—Plovers and Sandpipers.

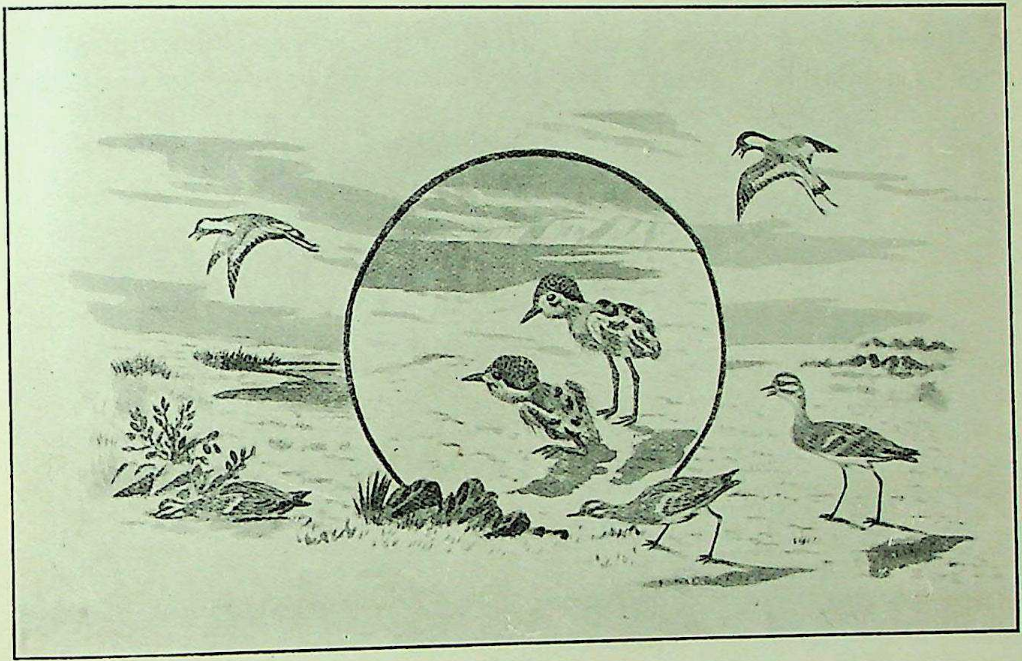
"The plovers, sandpipers and snipe are so nearly allied," writes Dr. Blanford, "that they must all be united into one family." I am going to defer so far to the opinion of the learned doctor as to treat of plovers and sandpipers together, but the snipe, being sporting birds, have been dealt with along with others of that ilk. Now there are about fifty species of plover and sandpiper in India, but we will consider only about ten of the commoner ones. Plovers always remind me of certain men I knew at 'Varsity, who invariably went about in riding breeches and gaiters, but who were never seen on horseback. Some unkind people went so far as to say that those horsey young men could



White-breasted Water-Hen (Amaurornis phoenicurus).

not ride! A plover is a bird dressed, or perhaps, I should say built, for wading, that never wades deeply. Plovers have long legs, but they are birds of meadows, and grassy and sandy tracts, rather than of marshes. They are often seen near water, but seem never to venture far into that element.

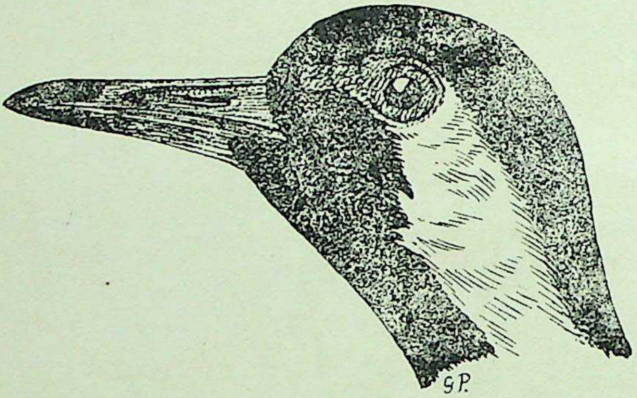
The most familiar of the Indian plovers is the did-he-do-it or red-wattled lapwing (*Sarcogrammus indicus*). Lapwing is another name for plover. Montagu tells us that the English lapwing (*Vanellus vulgarus*), which is found as a rare bird in North-Western India, is so called because of "the constant flapping of the wings during flight." This is not very illuminating; most birds flap their wings during flight! Lapwing is probably a corruption of kleape-wince. Our forefathers so named the bird because of the leaping or jerking antics it performs on the ground when a human being approaches its eggs. Kleapen means leap or run, wince means move from side to side.



YOUNG SPUR-WINGED PLOVER IN THE CENTRE; RED-WATTLED LAPWINGS (SARCOGRAMMUS INDICUS) FLYING; STONE-CURLEWS (OEDICNEMUS SCOLOPAX) RUNNING AND SITTING.

The head, neck and upper back of the did-he-do-it are black, and the lower back and under-parts are white. A broad white band runs down each side of the neck from the eye to join the white of the under-parts. The wings are of a beautiful greenish bronze hue, set off by a broad white band which meets the white rump and gives the bird a very striking appearance when it is on the wing. The legs are bright yellow. The bill is crimson red, as is the forwardly-pointing wattle, which forms so conspicuous a feature of the bird's face.

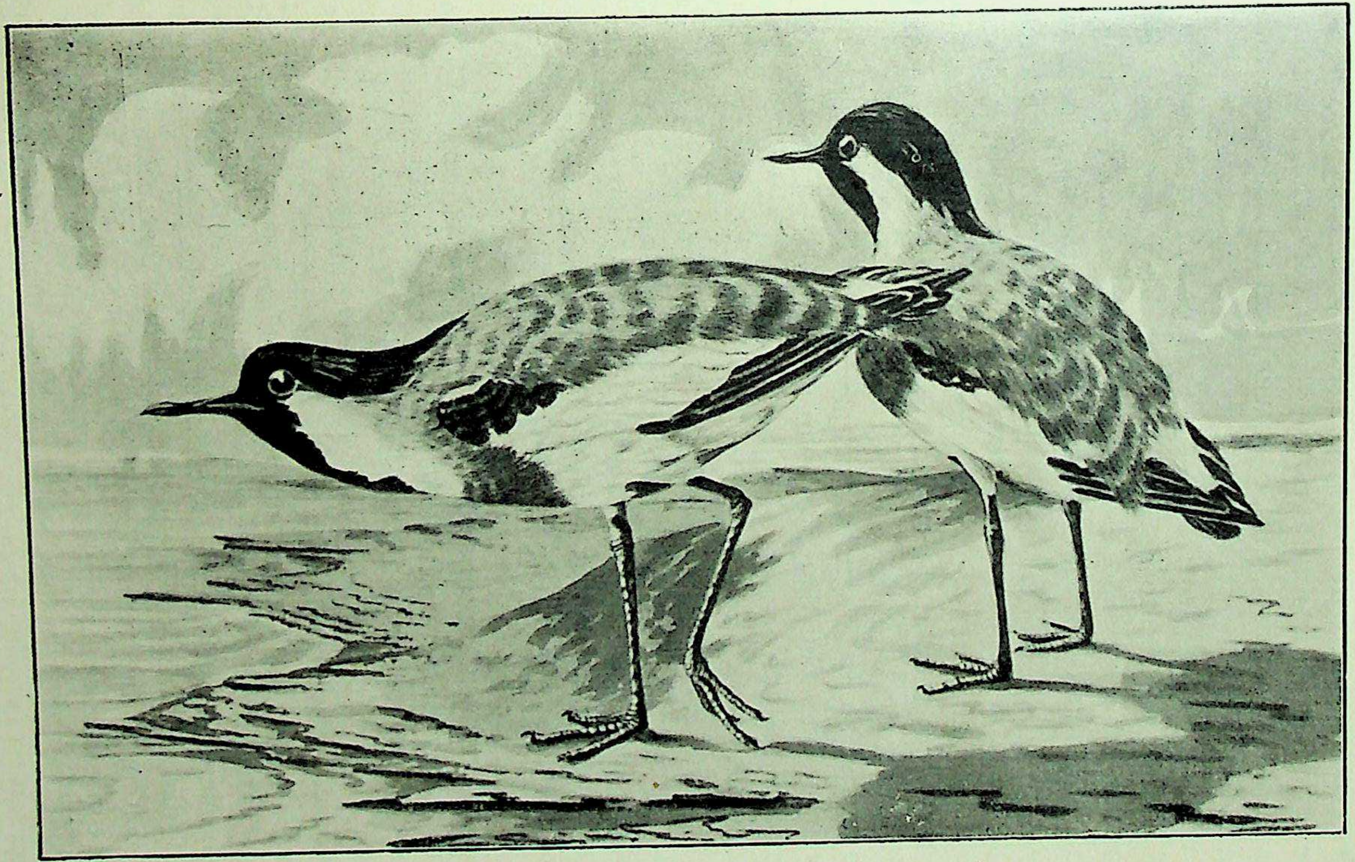
Very likely the red-wattled lapwing in appearance is the yellow-wattled species (*Sarcophorus malabaricus*). As the name indicates, the wattle of this bird is yellow. The species lacks the white band on the side of the neck, but its wing markings are the same as those of the red-wattled species. Both birds have the same habits, their calls are very similar, they live in stony places and in ploughed fields. They seem never to eat or sleep. They lay four typical plover's eggs in the middle of a ploughed field or on the ballast of the railway line; sometimes on the roof of a house. The eggs are stone-coloured with light and dark brown blotches, but is it necessary for me, when talking to epicurean readers, to describe plover's eggs?



Head of Lapwing.

The red-wattled species nests from March to June, while the yellow-wattled lapwing seems to lay only in April and May.

Almost more handsome than the two birds just described is the Indian spur-winged plover (*Hoplopterus ventralis*). This has greyish brown plumage with black and white markings. The pointed crest, which is usually recumbent, the greater part of the wings and tail, the chin and throat, and a band on the abdomen are black. There is a brown collaret and some brown in the wings. During flight the most conspicuous feature of the bird is a broad white wing band which meets the white rump and forms a pattern like that on the did-he-do-it. There is a spur on the front part of the wing which is difficult to make out unless the bird be held in the hand. The spur-winged plover seems to live entirely on sand near water. Two or more of these birds are to be found on every sand *chur* in the Ganges. The call of this plover may be syllabised, did-did-did-did-do-it, and is invariably uttered when the bird is on the wing. If you approach this bird, it will take to its wings and fly round you and scold in such a way that you think it must have a nest near by and is protesting because it fears you will



Spur-winged Plover (Hoplopterus ventralis).
Note spur on shoulder of wing. This is usually concealed in the feathers of the neck.

plunder it. This may be the case, on the other hand it may not be. The spur-winged plover like the Indian agitator makes a point of protesting whether he has a grievance or not!

When it does not know you are looking at it, the spur-winged plover is a quiet enough bird. It lives with the head half buried in the shoulders. When it runs with mincing gait with the head in this position, it has a you-have-hurt-my-feelings-and-I-will-have-nothing-to-do-with-you air.

As with all plovers, when it squats, the legs point forward, causing the bird to look as though it were kneeling the wrong way. It lays four eggs on the bare sand. These are in shape and colouring like those of the did-he-do-it. March and April are the months in which to look for them. The baby spur-winged plover is not unlike a tern of similar age, but it has only three toes, and these are not webbed. I may here say that plovers and sandpipers have no hind toe, or only a rudimentary one; they are, therefore, unable to grasp a perch and so never sit in trees.

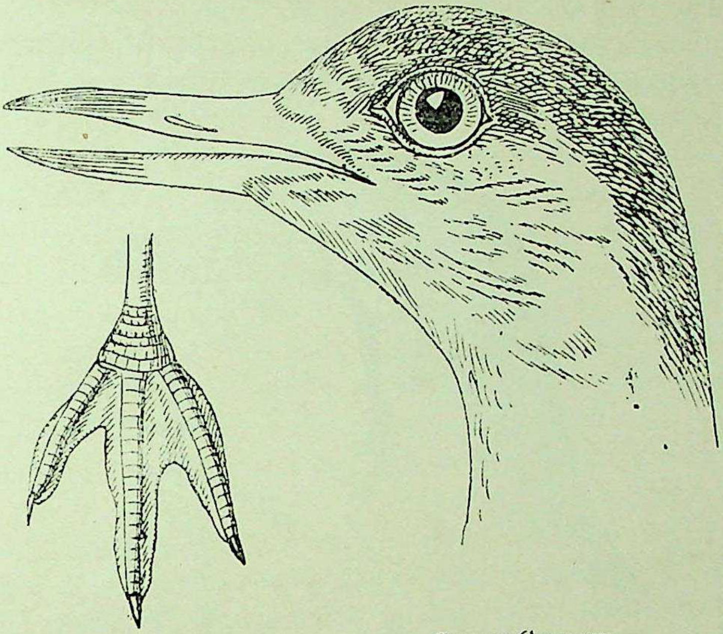
The legs of the baby spur-winged plover are black, its thick down is of a darker hue than that of the tern nestling, and has much the appearance of the fur of a tortoise-shell cat.

The golden plover and one or two other lapwings visit India in winter. One only of these is sufficiently abundant to require mention; this is the white-tailed lapwing (*Chettusia leucura*). A lapwing-like bird of sandy-coloured plumage and white tail and throat, having a black and a white wing bar, is probably this species. The white tail is so short that it is hidden by the wings, except when the bird is flying.

We now come to the sand-plovers. These are plovers which pick their food, as a rule, from off damp sand and do not mind getting their feet wet. They are small birds, varying in size from that of the sparrow to that of the myna. They usually go about in small flocks. They are dull brown birds with dark brown and white on the head. Sometimes the white takes the form of a necklace, then they are called ringed-plovers. Most of them are winter visitors to India, but two of them—the Kentish plover and the lesser-ringed species—sometimes breed in India. There are eight different kinds that occur in Hindustan; all belong to the genus *Ægialitis.*

Before passing on to the sandpipers, which are birds that obtain their food by probing in mud and wet sand, mention must be made of some other plover-like birds, the classification of which has somewhat puzzled men of science.

The stone-curlew or stone-plover (*Œdicnemus scolopax*) is rather a large bird, being half as big again as the did-he-do-it. It is a drab-coloured fowl with a white eyebrow and black-and-white wings; these the bird sometimes shows off by running about with them expanded. The large eyes are golden yellow. This bird is usually found on dry plains, which are not cultivated. It has the habit of crouching on the ground with its neck stretched out when it wants to conceal itself.



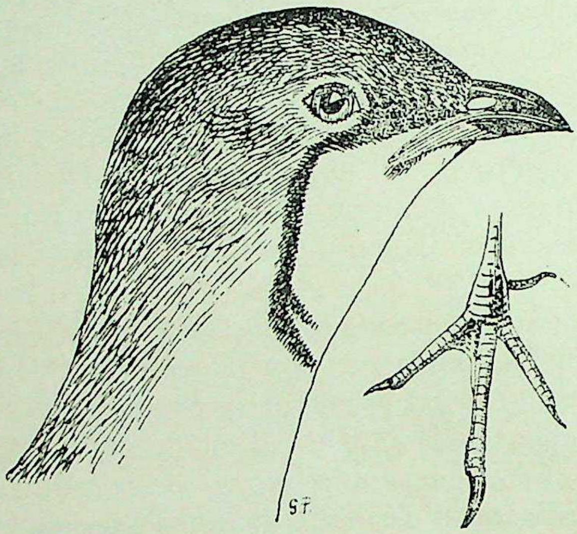
HEAD AND FOOT OF THE STONE-CURLEW.

This is probably why it is sometimes called the bustard florican. It seems to spend most of the day in sleep; at night it becomes lively, and that is the time when its curlew-like call is most often heard. It lays its plover-like eggs on the bare ground.

The great stone-plover or thick-kneed or goggle-eyed plover (*Esacus recurvirostris*) is one of the largest of the plovers, being every bit as big as the average Indian *murghi*. It may be distinguished from the last-named species by a black band that begins behind the white eyebrow and encircles both this and the eye. This bird lives on the banks of large rivers, and lays, between February and May, two very large eggs on the sand or bare ground. "It is said," writes Finn, "to have a loud harsh croaking note, but I should call what I have heard from it a squeal, varying from the awful screech of slate pencil 'scrooped' perpendicularly down a slate—as we have all done in our youth—to a regular yell, almost like a pig's, when the bird is handled." From what has been said it will be gathered that the goggle-eyed plover—so called from its huge head and eyes—is not numbered among the song birds of Ind!

The handsome Indian courser or courier-plover (*Cursorius coromandelicus*) is less than half the size of the goggle-eyed. It is a bird of stony, arid plains. The head and breast are chestnut. The chin is white, as is a patch above the tail. There are conspicuous white eyebrows which meet at the nape of the neck; below this is a black band running through the nape. The rest of the plumage is brown. The legs of the bird look as though they had been coated with white enamel. The eggs are of the usual plover type.

Swallow-plovers or pratincoles are curious little birds, the classification of which has puzzled ornithologists. There is a large and a small variety—*Glareola orientalis* and *G. lactea*; the latter is a very common bird. Swallow-plovers are plovers that seem to aim at becoming swallows. They catch their insect prey largely on the wing; they have, therefore, developed some of the peculiarities of birds that seek their subsistence in this way, namely long wings and a broad gape.



HEAD AND FOOT OF PRATINCOLE.

If you would see a swallow-plover, repair to a river at eventide when there are plenty of insects disporting themselves over the water. These provide a feast for swallows and martins and swallow-plovers. These last are not very much larger than swallows, being less than seven inches in length. The wing is nearly as long as the head, body and tail combined, and it is this feature that makes these plovers look so swallow-like. The general colour of the bird is sandy grey. The chin is white, the short tail is white with a black tip. There is a black streak through the eye and a white one near the margin of the wing.

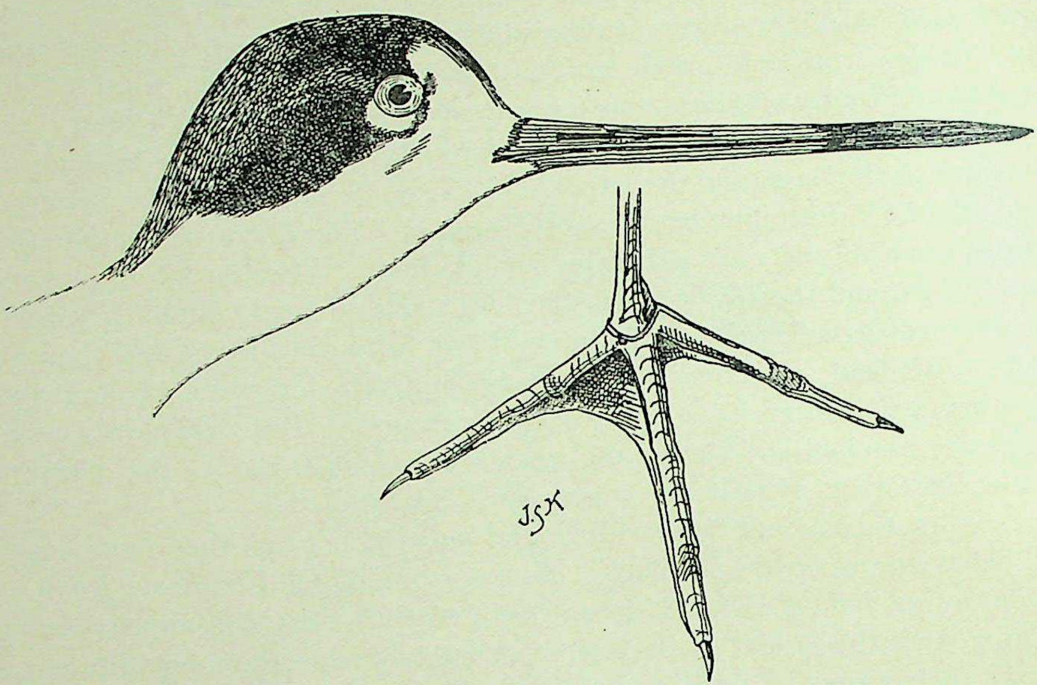
The legs are short for those of a plover, nevertheless the bird runs well, after the manner of lapwings. The nesting habits are those of terns and the eggs are usually laid at the same time and on the same sandbank as those of terns. The swallow-plovers generally form a small colony to themselves, and their eggs, which are smaller than those of most terns, although large for the size of the bird, are laid in shallow hollows on the sandbank, usually at a part where there is some stunted vegetation. The normal clutch of eggs is two. These, like those of terns and skimmers, vary extraordinarily in colouring. The ground hue ranges from pale green to fawn, in some it is almost white. The spots are usually smaller—mostly tiny specks—than those of terns.

Baby swallow-plovers are much like baby terns, but the bill, which is broad at the base, and the legs are black. The down is fawn-coloured and the dark markings are less pronounced. The down has rather the appearance of the coat of a clouded leopard. When swallow-plovers have eggs, and these are approached, the parent birds simulate injury in the most wonderful way. One will fall, head over heels, and then lie still as if dead, a second will limp as though a leg were broken and another will flutter as if a wing were injured. But, as soon as the eggs are hatched and the young ones are running about, the parents make little fuss, even if the young birds be handled.

Gulls, terns, ducks, partridges and lapwings, when they have eggs, all behave more or less similarly. For reasons which I have set forth in *Glimpses of Indian Birds,* I do not believe that they consciously feign injury with the object of deceiving an intruder and enticing him away from their eggs. To believe this would be to allow birds reasoning powers, which they almost certainly do not possess. At the time when birds have eggs or young ones, the parental instinct shows itself with such intensity that it might well be described as fury. When such birds see their treasures threatened, they become temporarily demented with anguish and in consequence scream or lose control of their muscles. The casual observer who sees their behaviour in this connection says, " What cunning and clever creatures birds are!"

The stilt (*Himantopus candidus*) is a bird that is easily identified. The body is about the size of that of a dove; the legs, if not quite so long as Oxford St., are long enough to give the bird the appearance of being on stilts. They are bright red. The wings and back are black in the male and brown in the female; the rest of the body is white. The bill is long and straight. The stilt haunts shallow water. It lays three plover-like eggs in the sand.

The avocet (*Recurvirostra avocetta*) is a beautiful bird. The long bill is very thin and has a pronounced upward curve—just the opposite of that of the curlew. The body of the avocet is about the size of that of a pigeon. The plumage is white with black on the top of the head, the back of the neck, the shoulders and wings. The avocet has long legs, and, like the stilt, haunts shallow water, where it secures its food by sweeping the water horizontally with its bill. This bird was once served up to me in Bombay as snipe. All manner of weird fowl do duty as snipe on Bombay tables. The avocet is only a winter visitor to India.



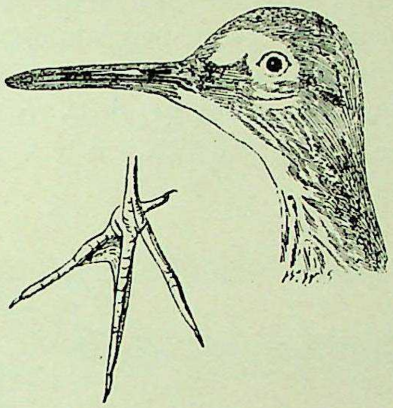
HEAD AND FOOT OF STILT.

Now for the sandpipers. These birds are so called because they always live on damp soil, often sand, and have curious plaintive piping calls. Sandpipers feed on water insects, crustacea and molluscs; ergo, they spend their time on wet sand or in shallow water. The borders of every river and lake in India are the winter hunting ground of scores of sandpipers.

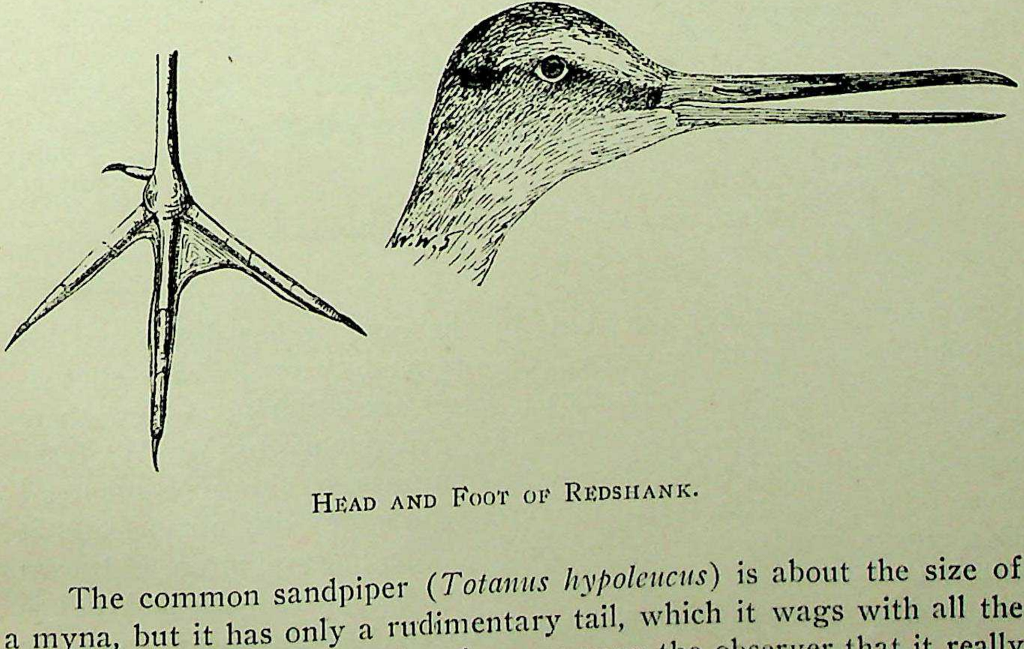
They have a snipe-like appearance and many of them are shot and eaten as snipe; for this reason the sportsman calls them snippets.

"The word 'snippet'" writes E. H. A., in *The Common Birds of Bombay*, "is not in the dictionary, but it is a word of very common use in India, as including any bird which purports to be a snipe and is not a snipe. There are many such, and since they are much easier to shoot than a real snipe, they find their way more readily to the market and to the tables of those who buy their game. The butler calls them 'ishnap' and he gives the same name to snipe, for he ignores the distinction." The butler goes further than this, he will serve up as snipe birds, such as avocets and did-he-do-its, which the newest griffen could not mistake for snipe. Hume, one of the greatest ornithologists who have lived in India, was dining out one day, when a dish of did-he-do-its was placed on the table. "Hallo" said Hume, "these are not snipe!" "Oh, yes they are" said the host: then turning to the butler he asked: "Butler, what birds are these?" That worthy replied "Isnap, saheb." "There you are I told you so! *He knows*!" said the host triumphantly to Hume.

When writing about snipe in the earlier part of this work, I dilated upon the features whereby a snipe may be distinguished from a sandpiper. I will not repeat myself. It will suffice here to describe briefly the more common sandpipers. As there are some twenty different kinds, all more or less alike, I will not attempt to describe all.



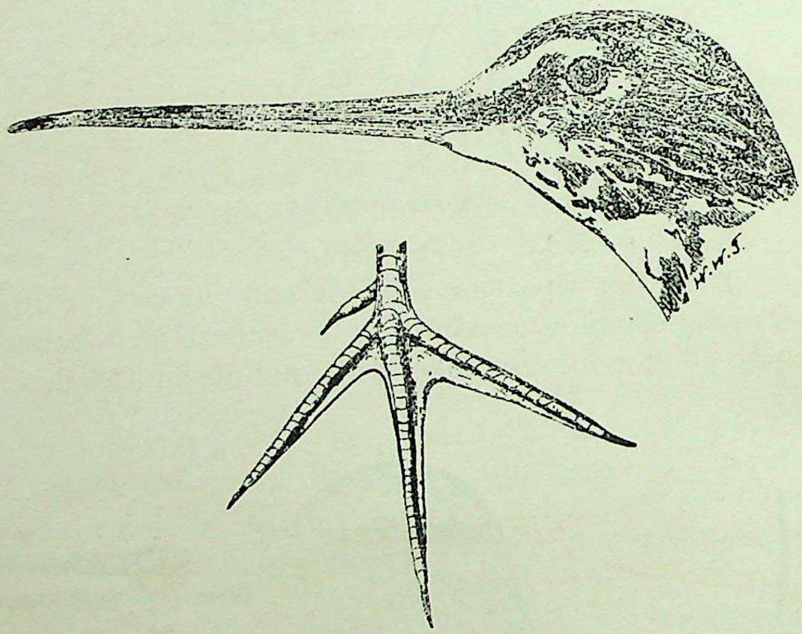
HEAD AND FOOT OF SANDPIPER.



HEAD AND FOOT OF REDSHANK.

The common sandpiper (*Totanus hypoleucus*) is about the size of a myna, but it has only a rudimentary tail, which it wags with all the assiduity of a wagtail, as if, to impress upon the observer that it really has a tail! It feeds on the mud on the margin of every tank, ditch, and river in India; when it is alarmed it flies away just over the surface of the water. It is a dull-looking bird. The upper parts are dark muddy brown tinted with olive; the lower parts are white. There is a narrow white *longitudinal* bar in the wing, visible only during flight. By this white bar you may recognise this bird at sight. It is very common in India in winter; much less so in summer.

The wood or spotted sandpiper (*Totanus glareola*) has probably been innocently provocative of more bad language than has any other bird. The reason of this is that it keeps company with snipes. It is always getting up from the *jhil* quite close to the sportsman, who, before he has heard the shrill cry which it utters on the wing, mistakes it for a snipe and takes aim at it; by the time he has discovered his mistake, he has probably missed the opportunity of an easy shot at some snipe that got up immediately after the sandpiper. Few there are who will not cordially endorse the mild remark of Mr. W. Jesse anent this sandpiper: "It is a perfect nuisance to the snipe-shooter." Those of us who have tasted the bird, will agree with Mr. Jesse, "it has a musky smell and is poor eating." The upper plumage is brown with dark spots; but the greater part of the lower back and tail is white. The white shows up when the bird is flying away from the sportsman. The amount of white showing in the plumage, as well as



HEAD AND FOOT OF SPOTTED REDSHANK.

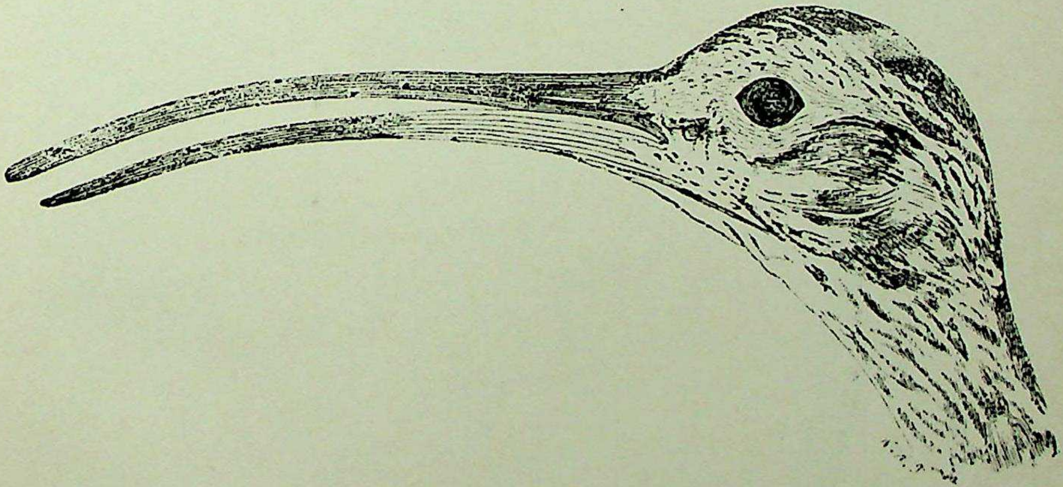
the un-snipe-like call are easy methods of distinguishing between this snippet and the snipe. Less common than the wood sandpiper and equally snipe-like in appearance are the redshank (*Totanus calidris*), the spotted redshank (*T. fuscus*), the greenshank (*T. glottis*) and the little greenshank (*T. stagnatilis*). As the English names imply, the two former have red and the latter green legs; by these and by their piping calls they may be distinguished from snipe as they rise from a *jhil.*

Before passing on to the godwits and the curlews, let me mention the little stint (*Tringa minuta*). "If," writes E. H. A., "you see a hundred dingy little birds, about the size of sparrows, all feeding together knee-deep in water, you may safely put them down as stints."

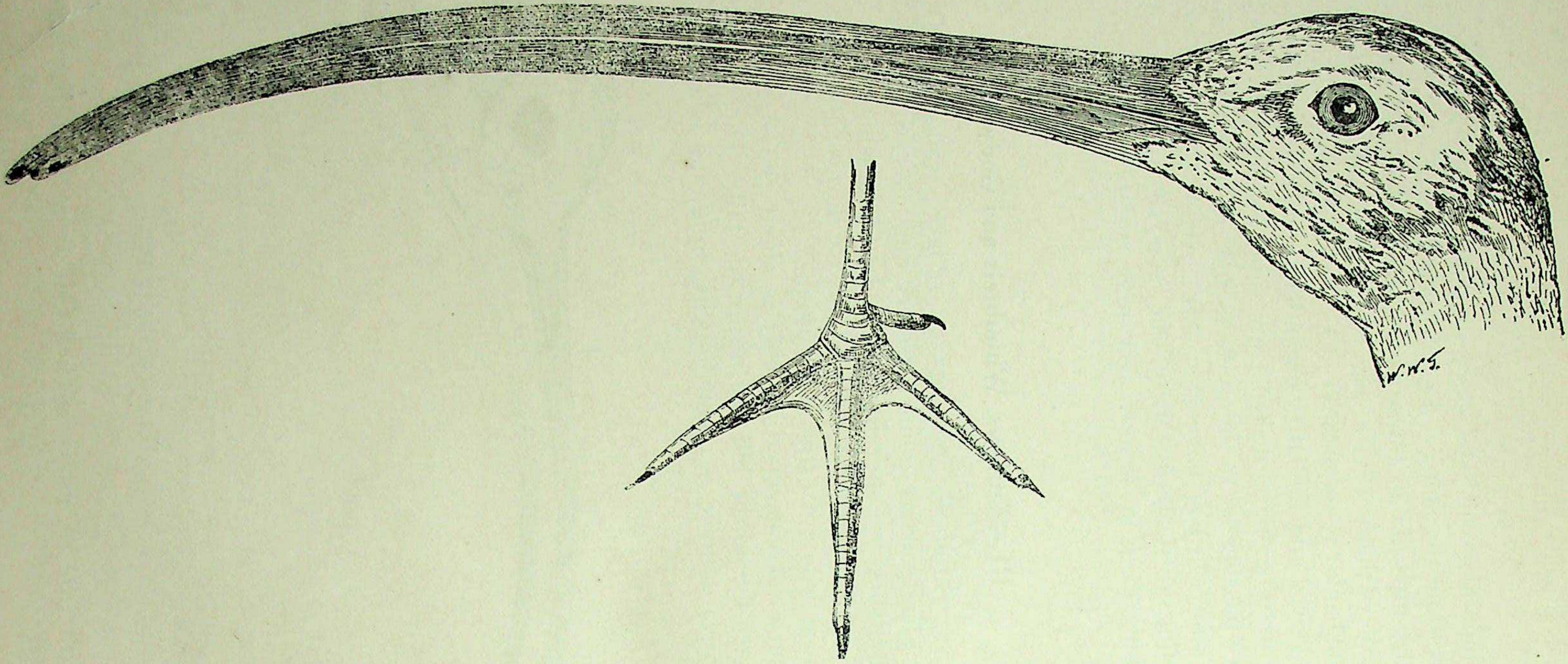
III.—Curlews, Whimbrels and Godwits.

Curlews, whimbrels and godwits are large wading birds, so large that in England, where game is scarce and mostly accessible only to the wealthy, they are shot for sport. In India where wild fowl and game are plentiful and accessible to all, we despise the humble curlew and godwit and do not often shoot them.

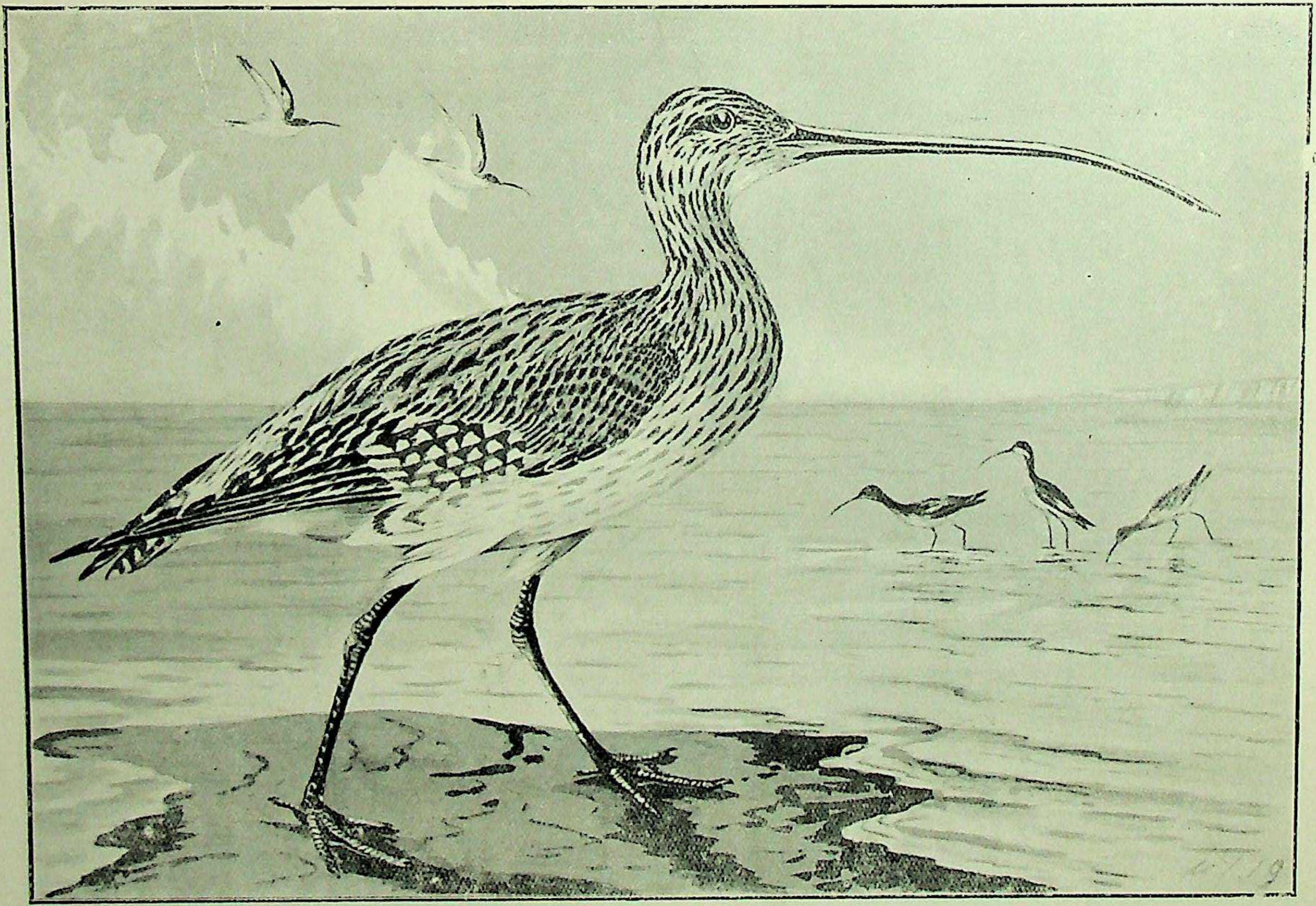
The curlew (*Numenius arquata*) is about the size of a pheasant, but its length lies in the bill and not in the tail. The bill, which has a slight downward curve, is about 6 inches long, and is used as a forceps for the extraction of crabs or shell-fish from their burrows in soft sand.



HEAD OF WHIMBREL.



HEAD AND FOOT OF CURLEW.

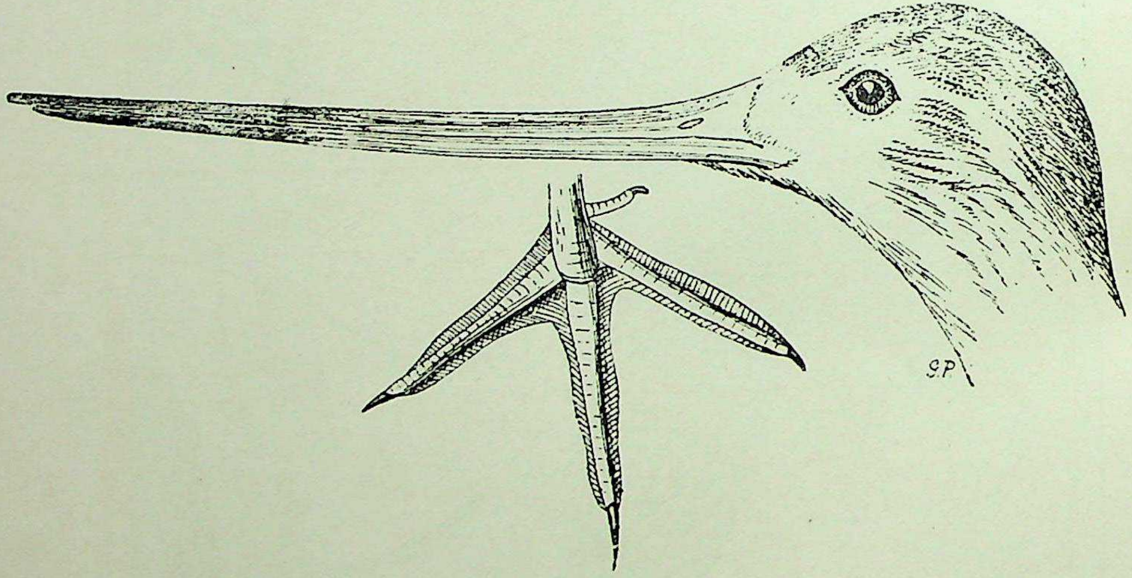


Curlew (Numenius arquata).

From a distance the curlew appears to be a drab-coloured bird, and assimilates closely to the hue of the wet sand on which it seeks its food. Close inspection, however, shows that the brown feathers of the upper plumage have darker centres, giving the plumage a mottled appearance. There is some white just above the tail. The whole of the lower plumage except the foreneck is white.

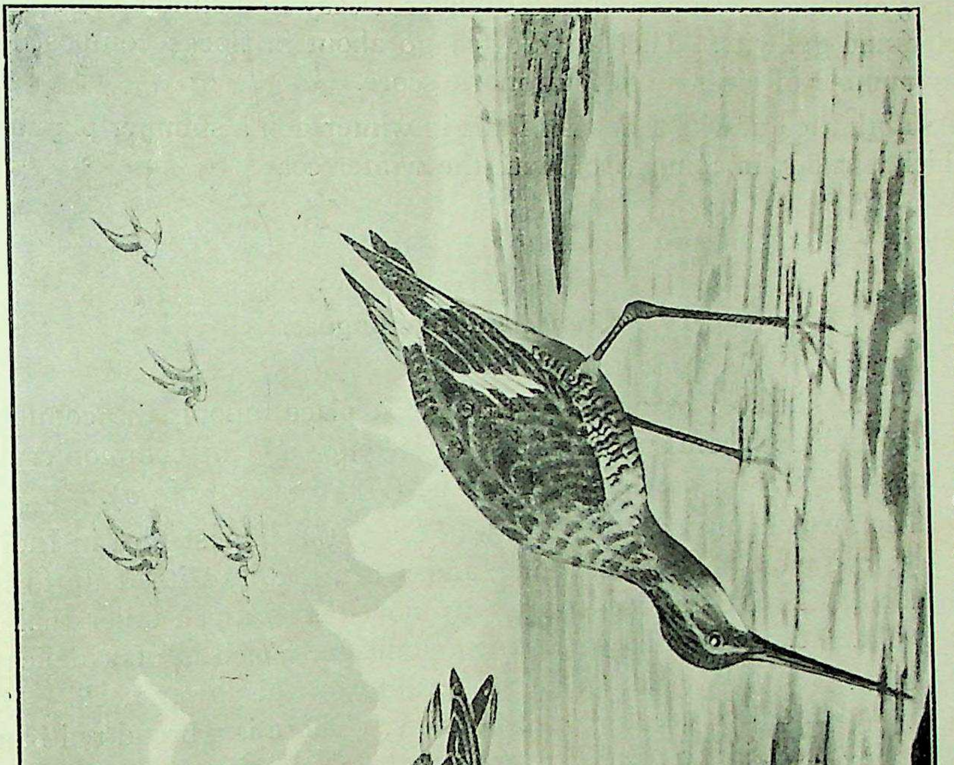
The curlew is a winter visitor to India and is fairly common on our sea coasts and on the margins of the bigger rivers. Usually it occurs in singles or couples: occasionally a small flock is seen. It is a wary bird and, as it lives on open flats, it is difficult to approach. On the wing it utters a peculiar plaintive cry.

The whimbrel (*Numenius phœopus*) is just a small edition of the curlew. The curlew is 23 inches long with a bill of 6, while the whimbrel is 17 with a bill of 3. The bill is less curved. Its colouring and habits are like those of the curlew. It is a winter visitor to India, but comes in smaller numbers than the curlew. Both the curlew and the whimbrel are edible: but neither are good table birds. The flavour of the whimbrel is the superior. Large numbers of both kinds of birds are netted and sold in the markets of large Indian towns.



HEAD AND FOOT OF BAR-TAILED GODWIT.

Godwits are snipe-like birds with long straight bills and long legs. They are much larger birds than the full snipe, the black-billed godwit (*Limosa belgica*) being about twice the size and the bar-tailed species



Black-tailed Godwit (*Limosa belgica*). Summer plumage.

(*L. lapponica*) about half as big again. The bigger species, of which the bill is about 4 inches long, often passes for a woodcock in the Calcutta bazar! The large size, the white bar in the wing, the white base of the tail and the fact that the godwits feed in the open on the edges of tanks, swamps and rivers render it easy to distinguish between snipe and godwits. The latter often go about in flocks composed of any number of birds up to four or five score.

Both the godwits that visit India in winter don a summer plumage, which is ruddy in comparison with the winter coat.

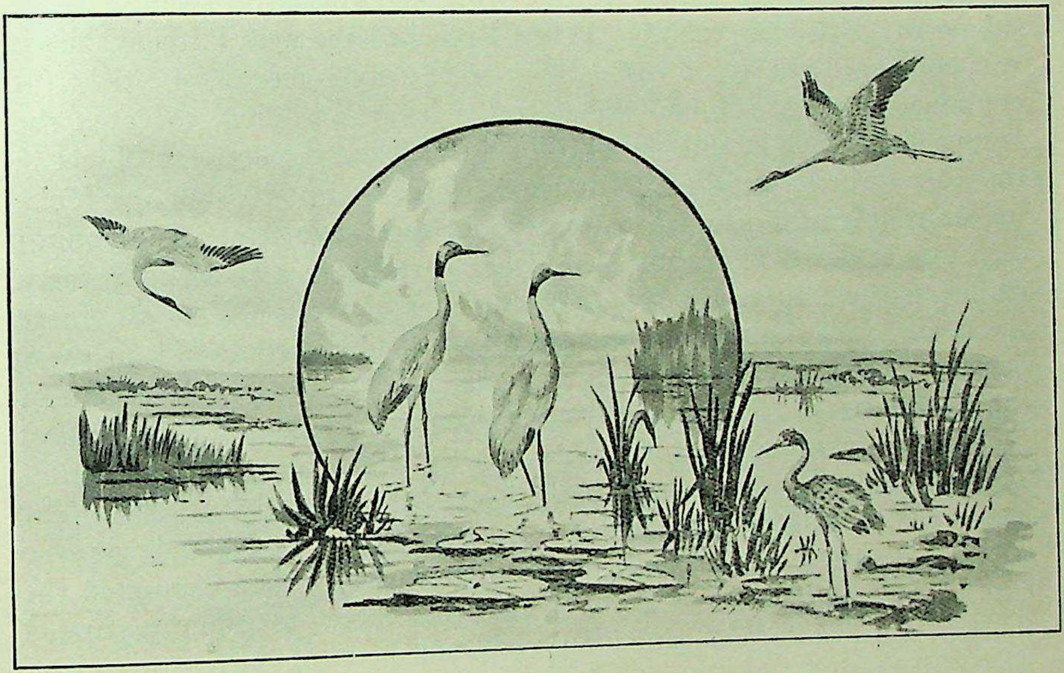
IV.—Cranes and Flamingoes.

Three kinds of crane are entitled to a place among the common birds of India. These are the sarus (*Grus antigone*), the common crane (*G. communis*), and the demoiselle crane (*Anthropoides virgo*).

The sarus enjoys the distinction of being the largest bird in India. Its legs are more than a yard long, and, when it draws itself up to its full height like the heroine in a trashy novel, it is much taller than a man. The sexes are alike as to their plumage, which is of a delicate blue grey, pale in the tail and almost white on the lower neck. The upper head and neck are devoid of feathers. There is a broad red band running round the neck and the lower part of the head. This band becomes very brilliant at the breeding season, when it looks like a collar of crimson velvet. The legs are pink and the eye is red. The sarus is a common bird in Northern India and Burma. The Burmese birds are of darker hue than the Indian ones and the neck feathers are grey. This has given the systematic ornithologist an opportunity to make a new species out of the Burmese bird, which he calls *Grus sharpii.*

Saruses very rarely occur in flocks. I have never seen a flock, but I will not assert that flocks never occur, because such is the nature of birds that whenever I make a sweeping statement about one, that bird proceeds to put me in the wrong! All the saruses I have seen have been in pairs, with sometimes a young one. Indians firmly believe that a pair are so devoted to one another that if one be killed its companion mopes until it dies; in order to prevent this catastrophe, those who eat cranes always make a point of killing the pair. Saruses feed on vegetable matter, reptiles, insects, molluscs, frogs, and possibly, fish.

They are equally at home on bone-dry places and on damp low-lying ground. Their loud, harsh, trumpet-like call must be familiar to all who have lived in the *mofussil* of Northern India. The sounds they make are of the kind to which distance leads enchantment. The sarus breeds in the rains. It has a small hind toe, apparently useless for grasping a perch, and in consequence it never perches on trees, and has, therefore, to build its nest on the ground. The nest is a considerable collection of grass, rushes and other kinds of vegetation; it is usually placed on a little knoll in a flooded field, or one of the circular mounds left in deep burrow-pits to assist in the measurement of the earthwork. Saruses seem very partial to burrow-pits near the permanent-way, and in the course of a journey by train during the monsoon you are likely to see several of their nests. The nest is usually about three feet in diameter. This fact alone would suffice to dispose of the belief, which once prevailed, that long-legged birds like cranes and flamingoes, sit astride their nests, as a man or a modern young woman does a horse, and in this attitude incubate the eggs. Two large white eggs are laid, but more often than not only one hatches out. There is an entry in my natural history diary for September 30th, 1912, which gives a detailed account of a visit paid by me to a sarus's nest at Philibhit. This was written immediately after the visit, and so has the merit of being strictly accurate: "My *shikari*, whom I had sent out to find sarus's nests, brought me news of one about four miles off. I set out after cutchery was over and reached the spot about 5 p.m. The nest was placed in a small piece of water perhaps



Sarus (Grus antigone) and Young.

forty feet square, with a millet field on one side, the railway on another, a road on the third, and rice fields on the fourth. The nest was only a few inches above the surface of the water; thirteen inches of rain fell the previous week, so there was plenty of water about. When we arrived the hen was sitting on the nest and the cock strutting about a little distance away. As I approached (on horseback), the hen rose slowly and stood on the nest, and then I could see that there was a young one. This was about the size of a bazar fowl. As I got nearer, the mother started apparently scraping at the nest with her feet and the nestling took quietly to the water and swam slowly to some paddy. Meanwhile the hen bird descended from the nest in a leisurely manner and quietly walked off. Although the cock came slowly towards me I did not anticipate any trouble. The birds seemed to be taking my visit very calmly. When I reached the nest I found that it was composed chiefly of rushes with some stout pieces of stick. It contained one egg. I told the *shikari,* who was wading, to catch the young bird which he did without difficulty; it did not seem to object in the least to being handled. The parent birds were also standing looking on calmly at a distance of twenty or twenty-five feet. The youngster was in down plumage. The upper parts were a rich ruddy fawn colour, darkest along the spine and the lines of the wing bones, where the colour was almost deep enough to be called chestnut. From these dark parts it gradually faded until it merged into the yellow cream of the lower parts. The eyes were large and black, the bill was pink at the base, becoming paler towards the tip which was almost white. The legs and feet were pale pink, the latter being slightly webbed. The legs were long in comparison with the size of the body, and were so weak that they could barely support the owner. I then examined the egg. It was cracked and a young one was about to emerge, and I thought I heard it "cheeping," but could not be quite sure as my horse was a bit restive,—he was standing in 2½ feet of water and kept swishing his tail and splashing the water with it. Suddenly the cock sarus decided to attack us. He bent his neck, half opened his bill, expanded his wings, and slowly advanced in a rather roundabout way. When he was within about six feet of me I made a pretence of striking him with my fly whisk—he was of course out of range. This had no effect, and he continued to advance slowly. Whereupon one of the men with me threw some rice stalks at him. That made him hop and he retreated a pace or two, only to return to the attack with renewed vigour. Then one of the men rushed at him, and he retreated a few paces, hastily but with dignity. Next he began to make circles round us, with neck and shoulders bent, like the villain in a melodrama. When he got within four feet of the *shikari* and made as if to spring at him, the *shikari* struck at him with a short stick.

Mr. Sarus dodged the blow and went back a pace or two. This comedy lasted about ten minutes. The hen kept all the while at a distance of some thirty yards—an interested spectator. Only once did the cock utter his trumpet-like call. When we had seen all we wanted and I had satisfied myself that the young bird is not protectively coloured, we replaced him in the nest together with the egg, and then departed to a distance of fifteen yards to see how the parents would behave, the *shikari* calling out to them *apne bache ko jao*! They approached the nest slowly, the cock leading. He was easily distinguishable by his larger size. When he had arrived within about ten yards of the nest he slowly drew himself up to his full height and stood thus motionless for a few seconds, then he pointed his bill to the sky, next the long neck bent itself into a regular S. While the neck was thus bent he dipped his bill into the water, and then became erect and repeated the performance. After this he danced a little dance. Then again he stood motionless. Meanwhile the hen returned to the nest, got up on to it and began probing about in it with her bill, apparently to ascertain whether any damage had been done."

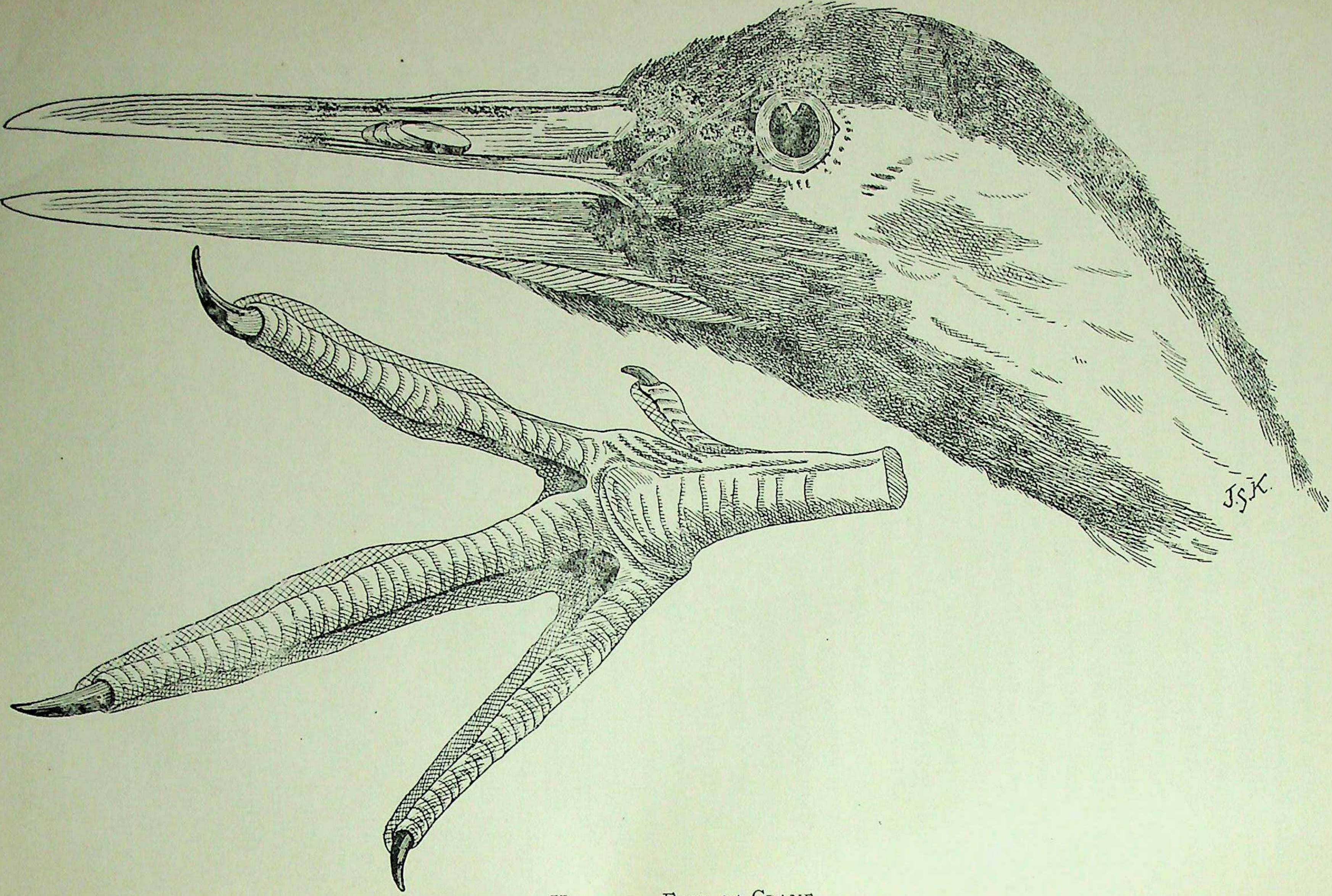
The common crane, which is often called the *kullan*, is a winter visitor to Northern India. Although a large bird it is considerably smaller than the sarus. The plumage is ashy grey; the head is devoid of feathers and has a bright red band across the top. The legs and feet are dark brown.

Cranes, like storks, fly with their long necks extended and so can be distinguished, at a glance, from the herons and paddy-birds which fly with the head sunk into the shoulders, which causes the neck to project like that of a pouter pigeon.

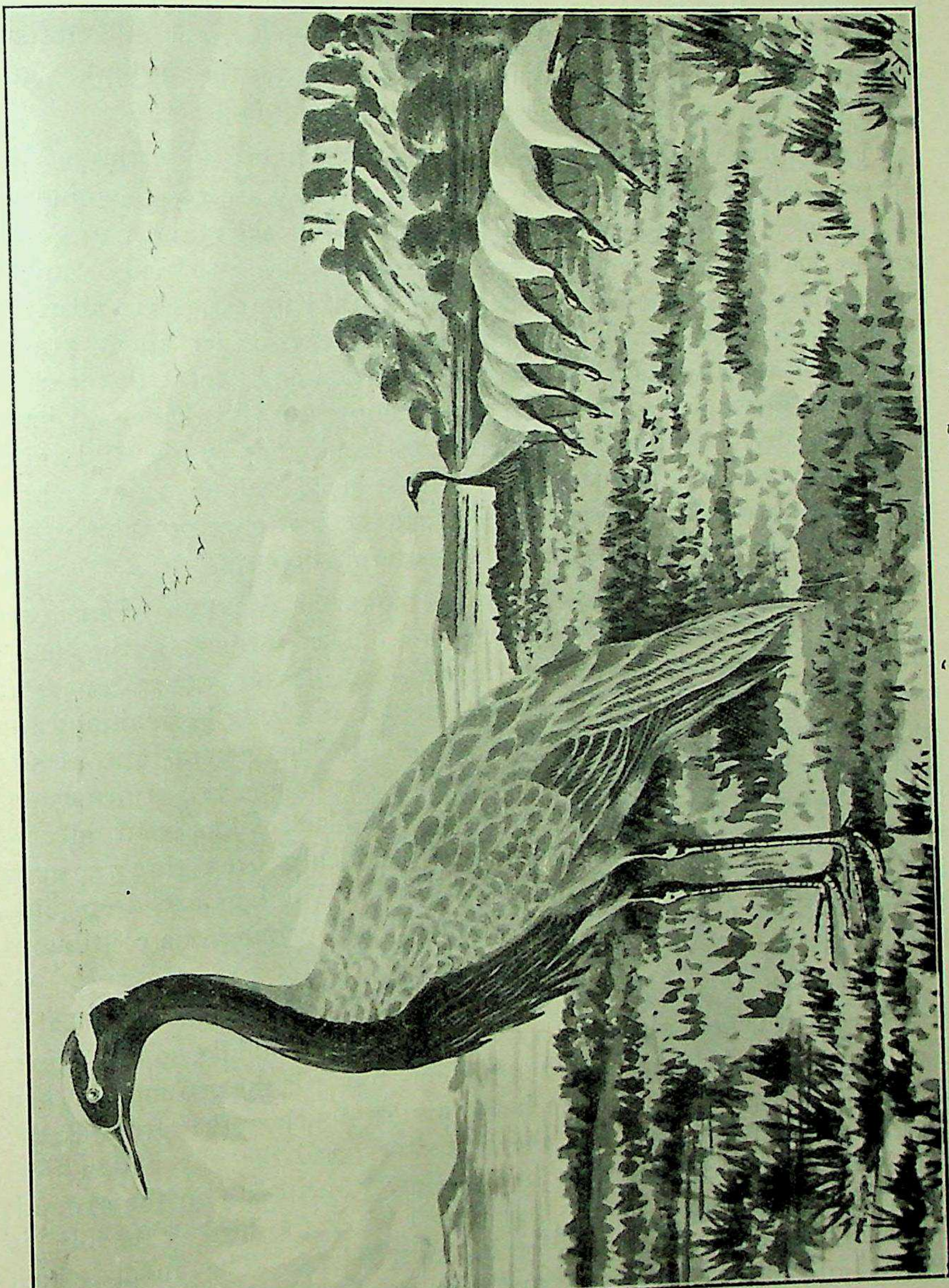
A characteristic of this and some other species of crane is that the webs of some of the wing feathers are free, like those of ostrich feathers. These wing feathers are so long that they project beyond the tail, which is short, and give the bird the appearance of having a bushy tail. Common cranes go about in flocks. They feed in the morning and evening, chiefly on grain, and do considerable damage to the crops. Having had their morning meal they betake themselves to the border of a river or tank, where they spend the day. Before sunset they return to their feeding grounds, and after supper roost on the ground in the locality at which they spent the day.

A flight of them often assumes the shape of a very open V. When on the wing they utter their clarion call which is so loud as to be audible to a person on the ground when the birds appear as mere specks overhead.

The demoiselle crane or *karkarra* is the smallest of the family and is not much more than half the size of the sarus. The head and



HEAD AND FOOT OF CRANE.



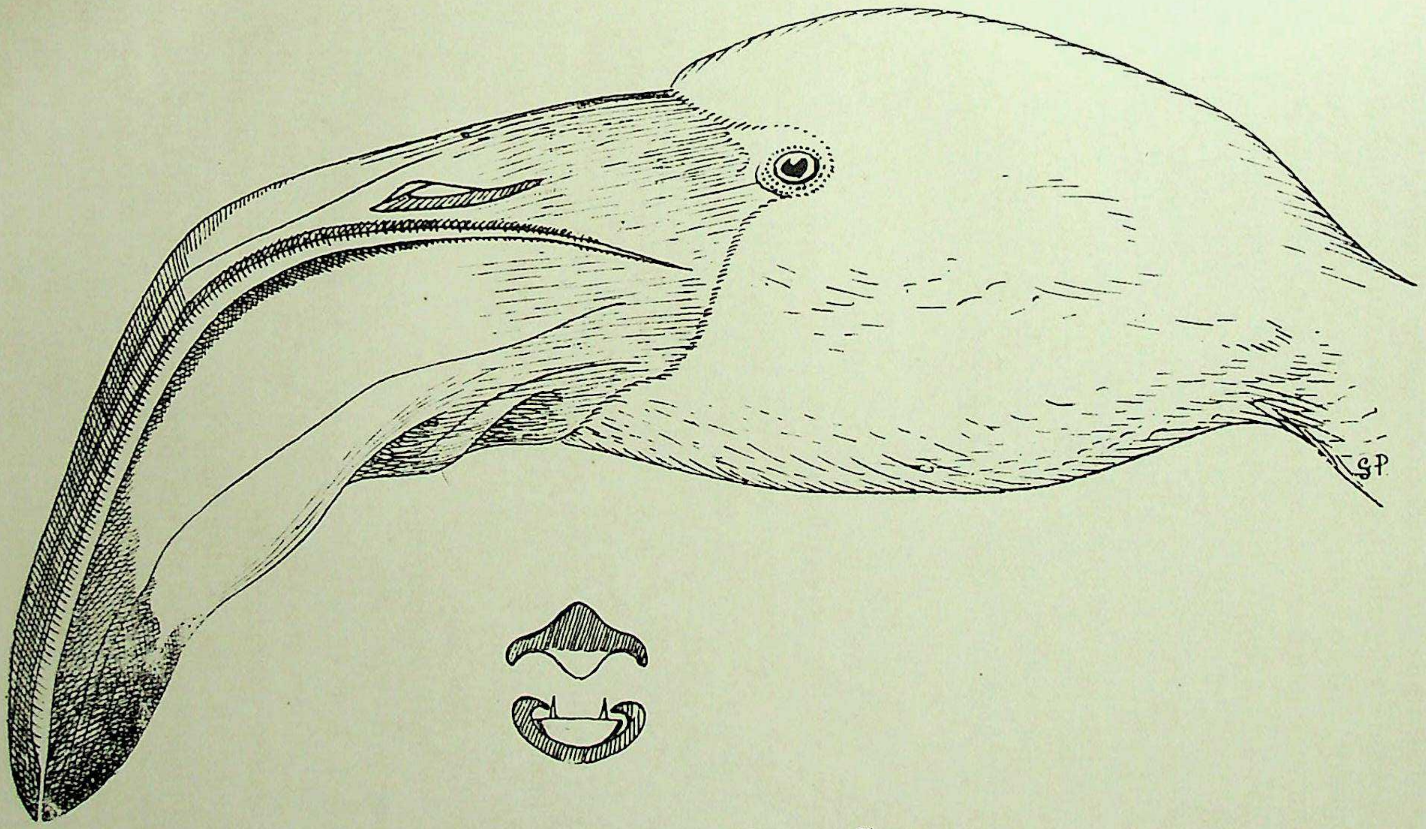
(Anthropoides virgo.) The Demoiselle Crane.

neck of this handsome bird are black, set off by red eyes, a grey cap, and white plumes which project from behind the eye. The wings are grey and black, the elongated wing feathers are stiffer and straighter than those of the common crane. Demoiselles usually occur in large flocks. The call is harsh, the name *karkarra* is undoubtedly onomatopoetic. Demoiselle cranes feed largely on the safflower seed. Their habits are much the same as those of the common crane.

I might have dealt with flamingoes in Number I of this series, because their front toes are fully webbed and they are good swimmers. When they swim they carry the stern high, after the manner of geese, and the neck curved. As, however, flamingoes are essentially waders, I prefer to class them with cranes. In truth, flamingoes are aberrant birds, which have puzzled naturalists. Some consider them crane-like ducks and others duck-like cranes. Jerdon and Stuart Baker class them with geese and Indians call them king geese (*Raj hans*). I have not had many opportunities of watching flamingoes in the wild state, but wherever I have seen them, it has been in shallow water, where there was no need for them to swim, but the soft ooze on which they walked rendered the webbed feet very useful supports.

Two species of flamingo occur in India, the common (*Phœnicoptrus roseus*) and the smaller (*P. minor*). The former is the more abundant. It is nearly as tall as a man, and measures over four feet from the tip of the bill to the end of the tail, the body is small and the neck and legs seem disproportionately long. The general hue of the bird's body is white, washed with pink. The wings are crimson and black. When a flock rises, the crimson-and-black wings open out and the flock looks as though a red light had suddenly been thrown upon it. The bill is pale pink, tipped with black. The legs are deep pink. During flight the neck and legs project stiffly, forming one continuous line broken by the crimson wings.

The neck is extraordinarily supple. The bill is a remarkable structure. It is bent almost to a right-angle in the middle, so that when the basal portion is horizontal the tip points towards the ground. When the bird feeds, the top of the head almost touches the ground, the tip of the bill points towards the bird's toes, and the upper mandible, which is flattened and smaller than the lower one, rests on the ground. The lower mandible, which is uppermost when the bird is feeding, is arched like the upper mandible, in most birds. The food, which consists of small crustaceans, molluscs, insects and vegetable matter, is scooped out of mud or slime. The mandibles are lamellated like those of a duck and act as sieves through which the fleshy tongue forces out the slime taken into the mouth, the edible matter alone being retained.



HEAD AND SECTION OF BILL OF FLAMINGO.

The nest of the flamingo is a mound raised above the water. The only place where they are known to breed in India is the Runn of Cutch. Dean Stanley gives a picture of a flamingo sitting astride on its nest. This, of course, is not accurate; the bird incubates with its long legs folded under the body. Two naturalists claim to be the first to have discovered this fact, and so keenly did each urge his claim that a law suit ensued, to the great astonishment of the learned judge, who could not be made to see the immense importance of the position of the legs of a flamingo when incubating the eggs! The only parts of India in which the flamingo is common are Sind, the backwaters of Madras, and parts of Guzerat, Rajputana, the Punjab and the U. P. Bengalis, however, have a good opportunity of observing these beautiful birds when the ship which bears them homewards is passing through the Suez Canal. The lagoons on either side of this are the resort of many flamingoes.

THE PERCHING WADERS.

I.—Storks.

We have now considered all the common wading birds which, having no hind toe, or only a poorly developed one, cannot perch in trees, excluding snipe and a few other birds which come under the category of the game birds, and which I, therefore, at the risk of incurring the wrath of the systematic ornithologist, decline to herd with the non-sporting birds. We must now give the perching waders an innings. There are a good many of these numbered among the common birds of India. They fall into three classes—the storks, the ibises, and the herons. All have a well-developed hind toe; this serves a bird in much the same way as the thumb does a man.

Now, the unfortunate birds that are not able to perch have to nest on the ground—a very dangerous place. In order to give the youngsters a chance of surviving—and the chance is not a good one—they are endowed with the power of running about the moment they leave the egg. Most birds that can perch know better than to lay their eggs on the ground. To the young of such it is a positive disadvantage to be able to run about directly they leave the egg; were they able to do this, most of them would run out of the nest and fall to the ground. This is why birds that are born in lofty nests are not able to run about when they are hatched. They remain safely in the nest until their wings are sufficiently developed to enable them to fly. With this preamble let me introduce the storks to you.

The chief features of a stork are its long legs, well-developed hind toe, long wings and short tail. The bill is stout and long. Most storks have no voice; when they want to make a joyful noise they have to snap the beak. There are eight kinds of storks in India, most of which are probably entitled to be numbered among the common birds. The first of these is known as the white stork (*Ciconia alba*). He is a white bird with some black in the wing, having bright red bill and legs. When describing storks the pronoun ‘ he ’ includes the ladies, for they are dressed just like the men.

Stork, number two, is called the black stork (*C. nigra*). He is a black bird glossed with green, but the lower parts from the middle of the breast downwards are white. The bill and legs are red.

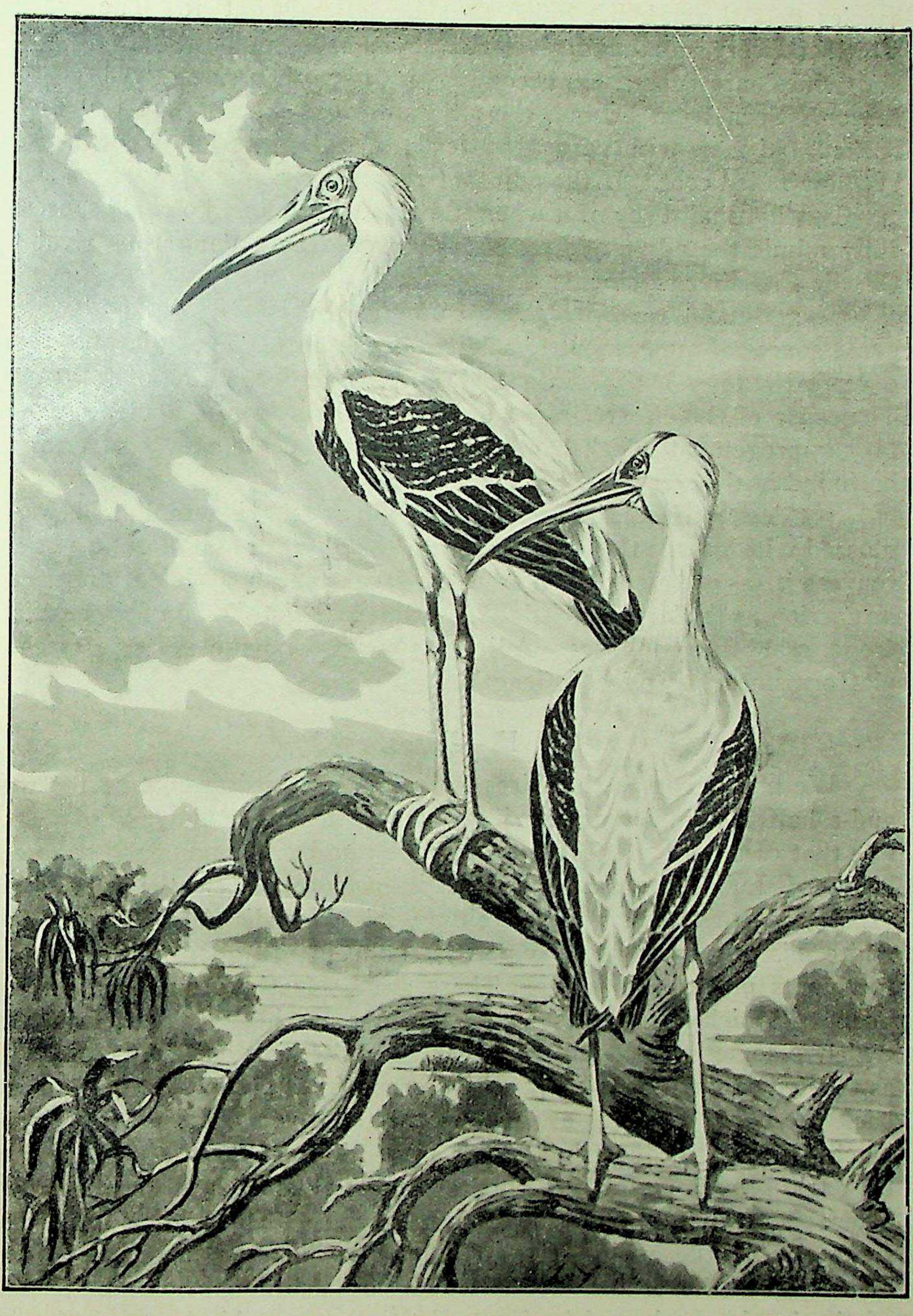
Number three is the white-necked stork (*Dissura episcopus*). This is a black bird glossed with green, but the neck, lower parts and tail are white. The bill is black and the legs red.

Number four is the black-necked stork (*Xenorhynchus asiaticus*). This bird is white except for the bill, head, neck, shoulders, tail and the greater part of the wings which are black. The legs are red.

Number five has rather an out-at-heels appearance. It is known as the openbill (*Anastomous oscitans*). Jerdon called this the shell-ibis. He might almost as well have called it the Grandfather's Clock! At all seasons of the year, excepting during the rains when it breeds, this bird looks like a white stork—sadly in need of a wash—which has damaged its bill through trying to crack nuts with it! In the breeding season the smoky grey of the plumage is replaced by white, but the gap between the upper and lower mandibles remains, so that you may easily distinguish it from the white stork. Again, at all seasons the bill and legs, instead of being bright red like those of the white stork, are of a dull, greenish hue, more or less tinted with red. Another feature which distinguishes it from the white stork is the fact that the face is devoid of feathers.

The painted stork *Pseudotantalus leucocephalus*) or pelican-ibis as Jerdon called it, is not so common as the five storks already mentioned. Its prevailing hue is white, but there is some pink and a good deal of black in the wings; the tail is black. Then there is across the lower breast a broad black band glossed with green. The bill, which is slightly curved downwards, and the face, which is devoid of feathers, are orange yellow; the legs are pink.

Lastly, there are the clowns of the bird world, the two adjutants—the adjutant (*Leptoptilus dubius*) and the lesser adjutant (*L. javanicus*). These are bigger than the other storks, which are about a yard long, except the black-necked stork, which is over four feet in length. The adjutant is five feet long and the lesser adjutant four-and-a-half. The bill of the larger species of adjutant is more than a foot in length, broad at the base and tapering to a point, its colour is dirty green. The only feathers on the head and neck are a few hair-like ones which remind one of the hairs on an elephant's head. The bare skin is blackish on the forehead, saffron-yellow on the upper neck and brick-red lower down. At the base of the neck is a ruff of white feathers of the kind seen in ladies' boas offered for sale in Bow Road. This ruff is of course quite out of keeping with the bare neck, and intensifies the grotesqueness of the bird. It fails to conceal the pouch which hangs from the throat. This pouch is over a foot in length and causes the bird to look as though it were suffering from goitre. A good account of this bird is contained in Cunningham's *Some Indian Friends and Acquaintances*. Writes Cunningham: "Even the splendid gamboge, orange and vermilion hues that paint the distended pouch as it hangs down in front of the chest, in place of redeeming the hideous and almost indecent character of the appendage, only



THE PAINTED STORK (PSEUDOTANTALUS LEUCOCEPHALUS). $\frac{1}{8}$ natural size.

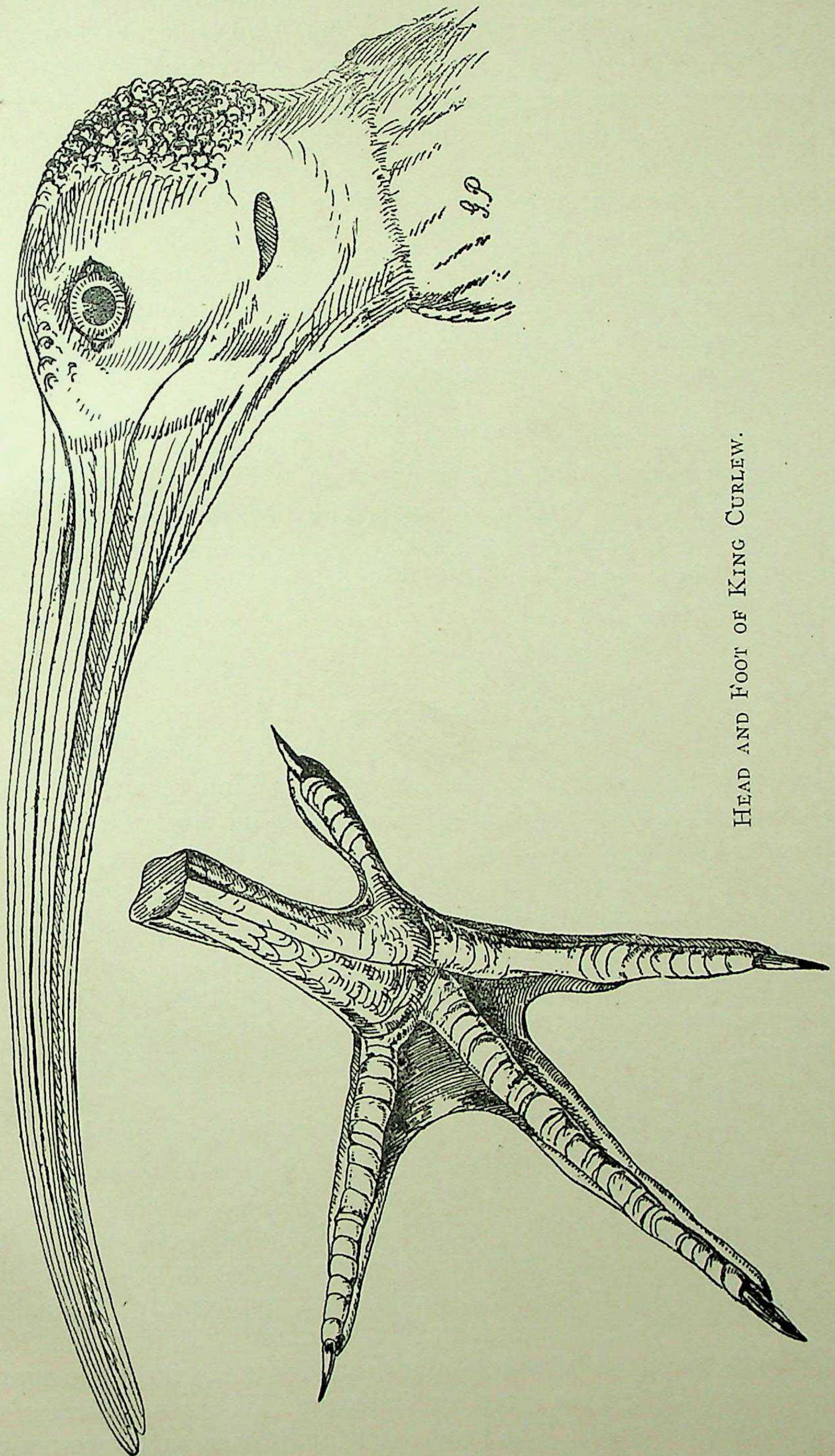
serve to accentuate the horror by attracting attention to its presence." It is not known of what use this pouch is to the adjutant. The lesser species gets through life quite comfortably without it. The eye is white and very small and gives the bird a malignant look. The back and wings are dark-grey, becoming tinged with blue at the breeding season. Seen from behind, the adjutant looks like a short, hunch-backed, old man with very thin legs, who is wearing a dark-grey swallow-tailed coat. If the adjutant presents a comic appearance as it stands, what shall I say of it when it walks? A man who could successfully mimic the adjutant's movements would be a dangerous rival to Charlie Chaplin as a cinema star!

The adjutant was formerly a common bird in Calcutta, and was a great source of amusement to soldiers in the Fort. The adjutants used to leave the town in the winter and return at the beginning of the rains. The cause of the disappearance of the adjutants from Calcutta is sanitary improvement which has greatly diminished the supply of offal to be found in the streets of the City of Palaces.

The lesser adjutant has the upper plumage, wings and tail black, glossed with green; this, together with the absence of the gular pouch, renders it easy to distinguish from the larger species. It does not feed on carrion as the larger bird does, but, like other storks, on fish, reptiles, frogs, crabs and molluscs. Adjutants construct huge nests in trees—platforms nearly six feet in length.

II.—Ibises.

We now come to the ibises. An ibis is a bird from two to two-and-a-half feet in length, having a long bill with a downward curve like that of a curlew. Three species are numbered among the common birds of India: the white ibis (*Ibis melanocephala*), the black ibis (*Inocutus papillosus*), and the glossy ibis *Plegadis falcinellus*). The white ibis is easy to identify. It is the size of a good, large English fowl. Its plumage is white. There are no feathers on the head and neck, of which the skin is black; the legs are black. The black ibis, which is sometimes called the king ibis or the king curlew, is also bald as to the head, which is black with a crop of red pimples on the top and back thereof. The legs are red, as are the eyes. The plumage looks black from a distance, but closer inspection shows the shoulders to be dark brown and the wings and tail glossy, dark purple-green. There is a white patch on each shoulder. This bird is about the same size as the white ibis. The glossy ibis has brown legs and eyes. The head and neck, which are feathered, except the part of the head round and in front of the eyes, are black streaked with white. The back, breast and abdomen are of a chestnut hue; the wings and tail are dark brown glossed with green or blue. This ibis is a



Head and Foot of King Curlew.

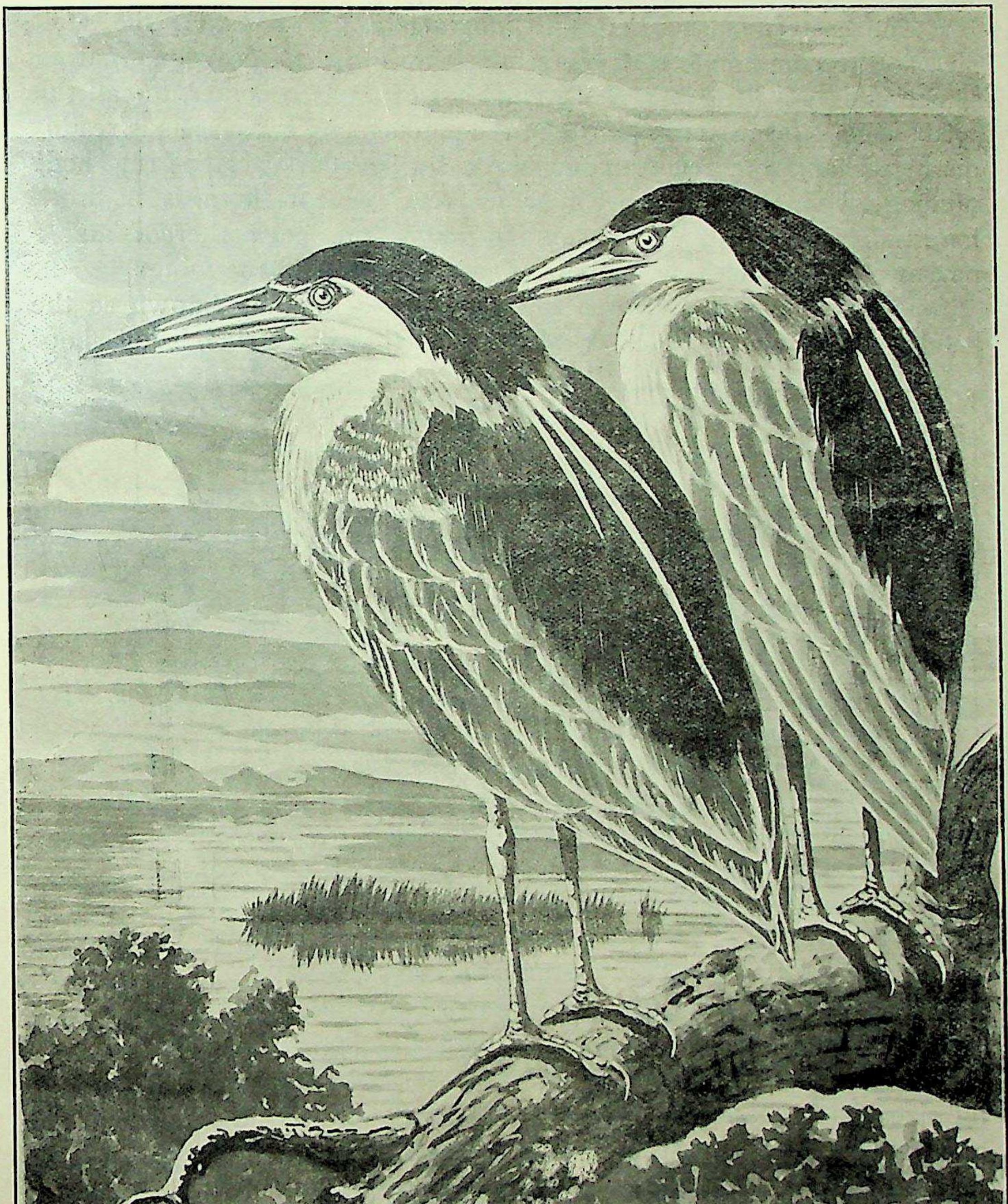
little smaller than the others, being about two feet in length, of which the bill accounts for nearly six inches. This bird is not so common as the other two. In most parts of India it is a winter visitor only. This species and the white ibis frequent tanks, marshes, paddy fields, the borders of rivers and the sea shore. They generally occur in small flocks. The black ibis, on the other hand, is usually found on dry land in pairs, sometimes in small parties. Ibises breed in the rains, building nests of sticks on trees.

The spoonbill (*Platalea leucordia*) is a large ibis—nearly a yard long—of which the beak has been flattened, so that it has considerable breadth but no depth. At the tip it is much broader than at the base. Indeed it is, as the popular name implies, like a flat spoon of which the handle is inserted in the bird's head. The plumage is white, the long legs and the bill, which is eight inches in length, are black. There is a bare patch of yellow skin on the throat and the front of the head. Spoonbills are said to be good eating. They go about in small flocks and spend most of their time on the edges of large rivers and in marshes and tanks. The habits of the spoonbill are similar to those of the ibises.

III.—Herons.

We have now to consider the herons. As Finn remarks: "Few birds are more recognizable at sight than a heron, although it may be as small as a myna or as big as a stork." All the long-legged birds hitherto described—the cranes, storks and flamingoes, etc., except the adjutants—fly with the neck and legs stretched out stiffly, so that when in the air each looks like a pole on wings. The herons likewise fly with the long legs projecting stiffly beyond the tail, but they carry the head buried in the shoulders, so that the neck projects like the throat of a fantail pigeon. Thus, when you see a long-legged bird flying with the head buried in the shoulders you may at once set it down as a heron or an adjutant. The latter can be easily distinguished by its large size and massive beak. The bill of the heron, although long, is slender and stiletto-like. A feature of the middle claw of the heron is that it is furnished with a comb by means of which the bird performs its toilet.

The common heron (*Ardea cinerea*), which Jerdon called the blue heron and which, in my opinion, might more appropriately be named the grey heron, is the species found in England. Before the Fens were drained this bird used to be abundant and was the favourite quarry of the falconer. It is over three feet in length. The general hue of its plumage is French grey. The head, neck and lower parts are mainly white. There are black streaks on the side of the face and in front of

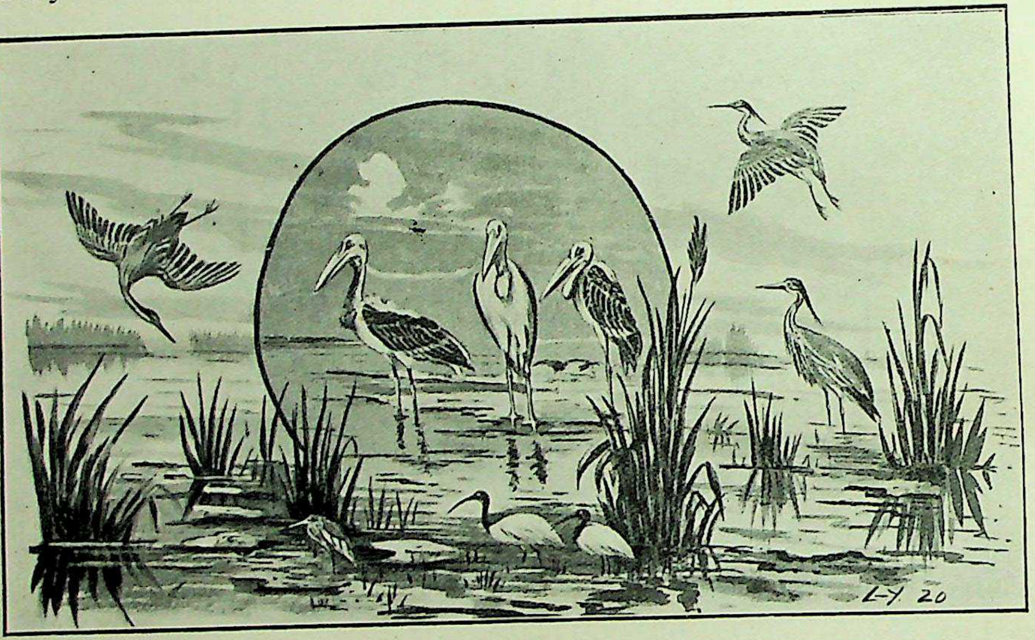


Night Heron (Nycticorax griseus.)

the neck. The large wing feathers have black edges; there is a long, rather scanty, pendant crest which is black. The bill is dirty yellow, the eyes are bright yellow, and the long legs greenish yellow.

The eastern purple heron (*Ardea manillensis*) is about the same size as the common heron. It requires an ornithological imagination, which is only a little less vivid than that of an astronomer, to call this bird purple. There is no purple in the plumage. This species is readily distinguished from the common heron by its dark, slaty-grey body plumage. The neck is the colour of rust, except there is a broad longitudinal stripe of black running along the back thereof and a narrow one on each side. There is some chestnut in the wings.

The pond heron (*Ardeola grayii*), more commonly known as the paddy bird, is one of the lesser members of the heron tribe, being about the size of a house-crow. It is the ubiquitous bird found on every piece of water in India, from the smallest village pond to the biggest *jhil* and river, and it sits all brown and flies all white. The prevailing hue of the head, neck, back and shoulders is that of mud; the feathers of the head and neck are streaked with buff. The wing feathers are white but these are completely hidden by the mud-coloured wing coverts when the bird is not actually flying.



Adjutant Storks (Leptoptilus dubius), in centre.
Eastern Purple Heron (Ardea manillensis), on right.
Blue Herons (Ardea cinerea), flying.
Pond Heron (Ardeola grayii), standing left.
White Ibis (Ibis melanocephala), below Adjutant.

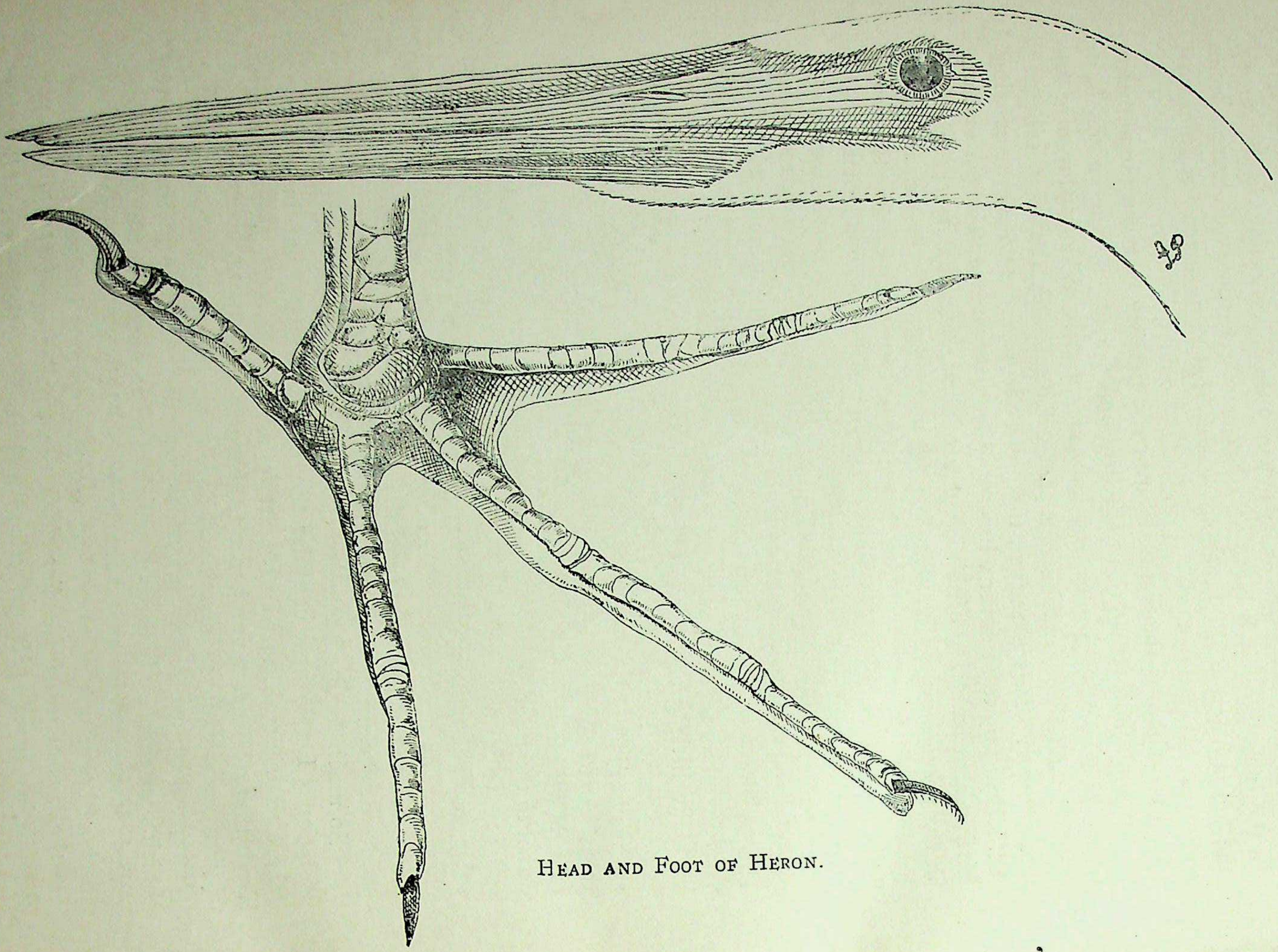
The three herons described above feed by day. Their habit is to stand in shallow water, perfectly motionless with the head drawn in to the shoulders and the fierce-looking yellow eye fixed on the water.

Presently a frog or some other aquatic creature comes along, then the telescopic neck shoots out and the quarry is seized and swallowed at a gulp. This is how the solitary herons feed.

Before describing the egrets or sociable herons, two more solitary herons must be noticed. These differ from those mentioned above, in that they are nocturnal or crepuscular in their habits. They lie up in trees or among rushes all day long; when the shades of night begin to steal over the land, they come forth and proceed to fish. The first of these is the night heron (*Nycticorax griseus*). When sitting on the *chabutra* after sunset most people have probably heard overhead a harsh *waak*. This is the call the night heron utters when on the wing. On looking up to discover whence the sound comes you see, perhaps one bird, perhaps a string of birds each about two feet in length, and which in the gloaming may be mistaken for flying foxes. These are night herons on the way from the tree in which they have spent the day to their feeding waters. The only piece of bright colour about the night heron is the red eye. The head, back and shoulders are black, glossed with green. As in the common heron there is a thin black recumbent crest. The rest of the upper plumage is ashy grey, while the forehead, cheeks and lower parts are white. From the nape grow two or three narrow white feathers of great length.

The little green heron (*Butorides javanica*) is about the size of the paddy bird. During the greater part of the day it hides in trees or rushes but is less nocturnal than the night heron, and often comes forth to fish just before sunset, and then you are able to make out by the help of field-glasses what a pretty little heron this is. The forehead, crown, down to the eyes, and a long pendant crest are black, glossed with dark-green. There is a short black line running back from the gape below the eye. The chin and throat are white, as is a streak on the ashy cheeks. The abdomen is chocolate brown, and the rest of the lower parts dull red. The wings and the rest of the plumage are various shades of green, streaked with grey and buff.

So much for the herons, great and small, that seek their quarry in isolation. Let us now consider the egrets which hunt in company. There are several species of egret found in India. These vary in size from that of the common heron to that of the paddy bird. They are all clad in snow-white plumage, and develop at the breeding season dorsal plumes which are highly prized as ornaments and form the aigrettes which are worn in hats and which for some unknown reason are called "ospreys" by merchants who deal in birds' plumage. Four species of egret are numbered among the common birds of India; these are the large egret (*Herodias alba*), the smaller egret (*H. intermedia*), the little egret (*H. garzetta*) and the cattle egret (*Bubulcus coromandus*).



Head and Foot of Heron.

These have been set forth in order of their size. They are all pure white birds, in consequence it is not an easy matter to distinguish one from the other. In the cattle egret the bill is yellow at all seasons. In the little egret it is black at all seasons. In the two bigger species the bill is black in the breeding season, that is to say in the rains, and yellow at other times.

In the herons there is little, if any, difference between the plumage of the male and female. In the breeding season in some species both sexes assume special plumes. Thus, in the case of the paddy bird the back and shoulders become maroon coloured and two or three long white hair-like feathers grow from the back of the head. These are shed after the breeding season. In case of the large egret a train of long ornamental feathers springs from the upper back; the feathers which constitute this are termed, in scientific parlance, decomposed, that is to say that there is a space between each barb, so that each feather forms a spray. These plumes extend four or five inches beyond the tail. The smaller egret develops a similar train, also some decomposed feathers on the breast. In the little egret a similar train is developed but no breast plumes. These breeding ornaments are all white.

In the case of the cattle egret the dorsal plumes which develop in the breeding season are not so long, and are orange buff; these form the " buff ospreys " of commerce. These plumes are very valuable and fetch as much as £1 an ounce. I shall refer again to them after describing briefly the habits of the egrets. Egrets feed largely on fish, molluscs and other aquatic organisms; they go about in flocks which may contain only a few individuals or be composed of several hundred. Sometimes a flock consists of more than one species. These birds haunt marshes, paddy fields and all other places where there is shallow water. Cattle egrets often frequent swamps, but more frequently they hunt for food in small companies on comparatively dry land. They are called cattle egrets because they usually accompany grazing cattle. These, as they wander about, put up grasshoppers and other insects that live in the grass, which are eagerly seized by the cattle egrets strutting alongside their great mess-mates. Thus the cattle act as beaters for the egrets. Everyone who has lived for any length of time in India must have seen snow-white cattle egrets accompanying grazing cattle.

Now, herons, whether they feed in solitude or in company, usually roost in company and invariably breed in large colonies, which are spoken of as heronries. During the rains they make stick nests on low trees, usually those which grow by the side, or out of water. An idea of the size of some of these colonies of breeding herons may be gathered from the following facts. At Etawah, Hume once counted 198 nests of paddy birds, cattle and lesser egrets in some tamarind trees in a Muhammadan graveyard. On one nearly horizontal branch he counted, in a length of 21 feet, 18 nests. There is a tank near Chingleput in the Madras Presidency, in which grow, or used to grow, five or six hundred trees of *Barringtonia racemosa*, which become partially submerged during the monsoon. This place forms the breeding resort of an immense number of herons, open-bills, ibises, cormorants, darters, paddy birds and egrets. Each tree is said to appear like a moving mass of black, white and grey, the white plumge of the egrets and ibises contrasting with the black of the cormorants and darters and the grey of the paddy birds. Each of the five hundred odd trees contains from ten to twenty nests.

Now, since the breeding plumes of egrets are so valuable, there used to be a great trade in these, and millions of such plumes were exported annually from India. Many of the plume hunters used to trap the birds and pull out their plumes (a simple operation and one apparently involving little pain to the birds and which could be made quite painless were scissors used to snip them off), and then restore to liberty deplumed birds, none the worse for their experience; but other hunters ruthlessly killed the breeding birds. The result of this was that the Government of India totally prohibited the export of plumage from India. This drastic measure is, in my opinion, unnecessary. The birds of India are a most valuable asset and, under proper restrictions, a large revenue might be derived by the export of plumage without entailing any cruelty and without diminishing the avifauna of the country; indeed the population of useful birds could be largely increased under proper management.

In Sind egrets are actually farmed and the nuptial plumes collected as they grow. In the natural state these plumes grow only once a year; but it appears to be a well-established fact that the egrets that are farmed grow these plumes four times in the course of the year. Let us hope that the day is at hand on which the financiers employed by the Government of India, having retrenched to the utmost limit, will adopt a policy of expanding the revenue by drawing upon hitherto untouched resources of the country.

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